# NEW ENGLAND FARMER

DEVOTED TO AGRICULTURE AND ITS KINDRED ARTS AND SCIENCES.

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SIMON BROWN, EDITOR.


## WONDERS OF JULY!

AT the opening of each new *Month*, for several years past, we have given an article referring especially to some of the peculiarities of that month as regards the condition of vegetation, insect life, the important offices which *each month* has to discharge, and with occasional reference to the special duties of the farmer at such particular period. In these articles we have felt more at liberty to indulge in allusions to the more recondite or hidden things of the farm than has seemed suitable in articles upon the management of the crops and general operations of the month. These operations, however, have frequently had special attention.

Farmers have been too long and too well contented with a partial knowledge of the most common things around them. They have seen their crops grow from year to year, their trees covered with fragrant flowers and luscious fruit, the seasons roll grandly on in their appointed course, and have given little heed to the numberless interesting sources of instruction and pleasure which throng every path in rural life. In preparing those brief Monthly Essays it has been our object gradually to lead the mind of the reader to these sources, where a wise Providence has created and fixed the abode of a peopled world, all unlike that which comes to the eye without especial observation. These sources may be found in every department of nature,—animal, vegetable and mineral,—and just in proportion as they are investigated and understood, will the happiness of the farmer be increased, as well as his power to protect his crops and increase his annual profits.

Some of the most eminent men of the world have given the best powers of their mind to an investigation of this *inner life on the farm*, and by the glowing descriptions which they have written have charmed and instructed thousands of other minds. The little gnat, so small that it can be seen with the naked eye only in a strong light, was fashioned and launched into existence by the same Almighty Power that gave the elephant his colossal frame and strength, or upheaved the mountains that pierce the skies, and whose heads are covered with eternal snows.

Let us attend, for a few moments, to a look into one of these *inner worlds* by Sir JOHN HILL, an English gentleman who wrote largely on Natural History and Philosophy, and who prepared a system of Botany in twenty-six folio volumes. The world which he explored was a single *carnation*, or *gorden pink* of the genus "*Dianthus*," which means "*Flower of God*," or "*Divine Flower*," on account of its pre-eminent beauty. He says:

"The fragrance of a carnation led me to enjoy it frequently and near. While inhaling the powerful sweet, I heard an extremely soft but agreeable murmuring sound. It was easy to know that some animal, within the covert, must be the musician, and that the little noise must come from some little body suited to produce it. I am furnished with apparatuses of a thousand kinds for close observation. I instantly distended the lower part of the flower, and placing it in a full light, could discover troops of little insects frisking and capering with wild jollity among the narrow pedestals that supported its leaves, and the little threads that occupied its centre. I was not cruel enough to pull out any one of them; but adapting a microscope to take in, at one view, the whole base of the flower, I gave myself an opportunity

of contemplating what they were about, and this for many days together, without giving them the least disturbance.

Under the microscope, the base of the flower extended itself to a vast plain; the slender stems of the leaves became trunks of so many stately cedars; the threads in the middle seemed columns of massy structure, supporting at the top their several ornaments; and the narrow spaces between were enlarged into walks, parterres and terraces.

On the polished bottom of these, brighter than Parian marble, walked in pairs, alone, or in larger companies, the winged inhabitants: these, from little dusky flies, for such only the naked eye would have shown them, were raised to glorious, glittering animals, stained with living purple, and with a glossy gold that would have made all the labors of the loom contemptible in the comparison.

I could, at leisure, as they walked together, admire their elegant limbs, their velvet shoulders, and their silken wings; their backs vieing with the empyrean in its hue; and their eyes, each formed of a thousand others, outglittering the little planes in a brilliant. I could observe them here, singling out their favorite females, courting them with the music of their buzzing wings, with little songs formed for their little organs, leading them from walk to walk among the perfumed shades, and pointing out to their taste the drop of liquid nectar just bursting from some vein within the living trunk; here were the perfumed groves, the more than myrtle shades of the poet's fancy realized; here the happy lovers spent their days in joyful dalliance;—in the triumph of their little hearts, skipt after one another from stem to stem among the painted trees, or winged their short flight to the close shadow of some broader leaf, to revel undisturbed in the heights of all felicity.

Nature, the God of nature, has proportioned the period of existence of every creature to the means of its support. Duration, perhaps, is as much a comparative quality as magnitude; and these atoms of being, as they appear to us, may have organs that lengthen minutes, to their perception, into years. In a flower destined to remain but a few days, length of life, according to our ideas, could not be given to its inhabitants; but it may be according to theirs. I saw, in the course of observation of this new world, several succeeding generations of the creatures it was peopled with; they passed, under my eye, through the several successive stages of the egg and the reptile form in a few hours. After these, they burst forth at an instant into full growth and perfection in their wing-form. In this they enjoyed their span of being, as much as we do years—feasted, sported, revelled in delights; fed on the living fragrance that poured itself out at a thousand openings at once before them; enjoyed their loves, laid the foundation for their succeeding progeny, and after a life thus happily filled up, sunk in an easy dissolution. With what joy in their pleasures did I attend the first and the succeeding broods through the full period of their joyful lives! With what enthusiastic transport did I address to each of these yet happy creatures Anacreon's gratulation to the cicada:

Blissful insect! what can be,
In happiness, compared to thee?
Fed with nourishment divine,
The dewy morning's sweetest wine.
Nature waits upon thee still,
And thy fragrant cup does fill.
All the fields that thou dost see;
All the plants belong to thee;
All that summer hours produce,
Fertile made with ripening juice.
Man for thee does sow and plow,
Farmer he, and landlord thou.
Thee the hinds with gladness hear,
Prophet of the ripen'd year!
To thee alone, of all the earth,
Life is no longer than thy mirth.
Happy creature! happy, thou
Dost neither age nor winter know;
But when thou'st drank, and danc'd, and sung
Thy fill, the flowery leaves among,
Sated with the glorious feast,
Thou retirest to endless rest.

While the pure, contemplative mind thus almost envies what the rude observer would treat unfeelingly, it naturally shrinks into itself on the thought that there may be, in the immense chain of beings, many, though as invisible to us as we to the inhabitants of this little flower—whose organs are not made for comprehending objects larger than a mite, or more distant than a straw's breadth—to whom we may appear as much below regard as they to us.

With what derision should we treat those little reasoners, could we hear them arguing for the unlimited duration of the carnation, destined for the extent of their knowledge, as well as their action! And yet, among ourselves, there are reasoners who argue, on no better foundation, that the earth which we inhabit is eternal."

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RAISE THE CALVES.—We have said it before, and say it again, that the common practice of selling our calves to the butcher, is one of the poorest pieces of farm husbandry ever practiced. Not that every small farmer who may have one or two can profitably raise them, but that every farmer who has the keeping, or any legitimate way of getting it, should keep his calves until they are two or three years old. We do not advocate the keeping of any more stock than can be *well* kept. Very many of our farmers, by selling their calves, have let their stock run out, so does the farm also. Now we want such ones to turn over a new leaf. Commence the raising of your calves. They will gradually increase your stock, and as your stock increases in numbers, so will your fields in fertility.—*Michigan Farmer.*

## STATISTICS OF CHEESE FACTORIES.

The following statements are from reports made at the late Cheese Manufacturers' Convention at Rome:

*Alfred Buck's Factory, Vernon, Oneida Co.*—Number of cows, 470, for six months; 145,695 pounds cheese made; 10 10-100 pounds milk made 1 pound dry cheese; cheese sold for 13 cents per pound; the cost of boxes, bandage, salt, &c., 40¼ cents for 100 pounds; price charged by cheese maker (he furnishing his own help) for making cheese, $1 per 100 pounds—making whole cost $1.40¼.

*Williams, Adams & Dewey's Factory, Hampton, Oneida Co.*—Number of cows, 350; pounds of milk, 976,378; pounds of cured cheese, 95,959, sold for $12,279.73; 10 pounds 2 ounces milk made 1 pound cheese; price of making cheese, at $1 per 100 pounds, $959.59; incidental expenses, $386.92; total, $1,346.51.

*Whitesboro' Factory, Oneida Co.*—Number of cows, 650; eight months milking; number of pounds of milk was 2,122,855; number of pounds of cheese, 207,313; sold for 12 cents and 88-100 per pound. Thirty cords of wood used, costing $90; 3 tons of coal, costing $24. Expense of bandage, salt, boxes, &c., 45 cents per 100 pounds; shrinkage of cheese 4 per cent.

*Clark's Factory, Vernon, Oneida Co.*—Number of cows (not reported;) pounds of milk, 955,915 for four months; number of pounds of cured cheese, 101,694; number of pounds of green cheese, 107,083; 9,399 pounds of milk for 1 pound of cured cheese; expense of boxes, &c., 40 cents per 100 pounds cheese.

*Miller's Factory, Constableville, Lewis Co.*—290 cows; 971,515 pounds milk; 100,089 pounds cured cheese. Net sales of cheese, $11,011.64; 9 7-10 pounds of milk for 1 pound of cured cheese—the amount of shrinkage was 6 17-100 per cwt.

*Deerfield and Marcy Factory, Oneida Co.*—700 cows; 1,949,215 pounds of milk; 193,335 pounds cheese; 10 82-100 pounds of milk, 1 pound of cheese; cheese sold for 13 611-1000 cents per pound, delivered at Utica.

*Lowville Factory, Lewis Co.*—600 cows; 1,763,934 pounds milk; 172,162 pounds dry cheese; shrinkage, 8,754 pounds; cheese sold for 13 7-10 cents per pound; cost of bandage, boxes, &c., 43 cents.

*Georgetown Factory, Madison Co.*—435 cows; 1,538,204 pounds of milk; 156,911 pounds of cheese; 9¾ pounds of milk for 1 pound of cheese; shrinkage, 3½ per cent; cheese sold for 12½ cents per pound.

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MOISTURE IN THE AIR.—One of the most curious and interesting of the recent discoveries of science is, that it is to the presence of a very small proportion of a watery vapor in our atmosphere—less than one-half of one per cent.—that much of the beneficent effect of heat is due. The rays of heat sent forth from the earth after it has been warmed by the sun, would soon be lost in space, but for the wonderful absorbent properties of these molecules of aqueous vapor, which act with many thousand times the power of the atoms of the oxygen and nitrogen of which the air is composed. By this means the heat, instead of being transmitted into infinitude as fast as produced, is stopped or dammed up, or held back on its rapid course, to furnish the necessary conditions of life and growth. Let this moisture be taken from the air but for a single summer night, and the sun would rise next morning upon a "world held fast in the iron grip of frost."

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## THE BOTTOM OF THE SEA.

Our investigations go to show that the roaring waves and the mightiest billows of the ocean repose, not upon hard and troubled beds, but upon cushions of still water; that every where at the bottom of the deep sea the solid ribs of the earth are protected, as with a garment, from the abrading action of its currents; that the cradle of its restless waves is lined by a stratum of water at rest, or so nearly at rest that it can neither wear nor move the lightest bit of drift that once lodges there. The uniform appearance of those microscopic shells, and the most total absence among them of any sediment from the sea or foreign matter, suggest most forcibly the idea of perfect repose at the bottom of the deep sea. Some of the specimens are as pure and as free from sea-sand as the fresh-fallen snow flake is from the dust of the earth.

Indeed, these soundings almost prove that the sea, like the snow-cloud with its flakes in a calm, is always letting fall upon its bed showers of these minute shells; and we may readily imagine that the wrecks which strew its bottom are, in the process of ages, hidden under this fleecy covering, presenting the rounded appearance which is seen over the body of the traveller who has perished in the snow storm. The ocean, especially within and near the tropics, swarms with life. The remains of its myriads of moving things are conveyed by currents; and scattered and lodged in the course of time all over its bottom. This process continued for ages, has covered the depths of the ocean as with a mantle, consisting of organisms as delicate as hoar frost, and as light in the water as down in the air.—*All the Year Round.*

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GRUB IN THE HEAD.—It having been stated in the Brandon, Vt., *Record*, that a disease is making alarming havoc among the large flocks of sheep in Rutland County, insomuch that farmers are unwilling to admit the full extent of its fatality, which in some cases it is said amounted to scores, and even hundreds, on single farms,—the Woodstock *Standard*, of last week, gives the following remedy recommended as almost infallible by a farmer who has used it repeatedly:

Take yellow snuff, in the proportion of one tablespoonful to a tea-cup full of water, and steep till a good strong liquor is produced. Inject a tablespoonful of this liquor into the sheep's nose once a day as long as necessary.

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TO CLEAN SILK.—Quarter pound soft soap, one ounce honey, one pint gin. Put on with a flannel, or nail brush, and afterwards brushed with cold water, then dipped in cold water five or six times, and hung out to drain, then ironed (*wet* on the wrong side) with a hot iron.

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A JOKER suggests that a photograph album is too often made the receptacle of empty mugs.

## PLOWING---DRAINING.

On the 17th instant, we were plowing with a heavy pair of cattle and horse on a side hill, where the footing was firm and good,—but where, four years ago, a man could not walk without wetting his feet and occasionally getting mired. This change was effected by *draining*. Common pipe drains were put down four feet below the surface, and the drains laid twenty feet apart. The grass came in last summer and gave a heavy crop, and now, in the midst of a long storm and generally wet season, the land is in admirable condition to be plowed and planted.

We have practiced draining our wet lands, and believe that we engage in no operation on the farm that is more profitable. It is wonderful, what a change is effected in such land in the course of two years. From a wet, sticky, heavy soil, it becomes porous and friable, dropping into fine grains when stirred, and rendering it light and pleasant to cultivate. The change in its products is also as great as that of its mechanical condition. Water grasses, hassocks and rushes disappear entirely, and sweet timothy, red-top and clover take their places. On a portion of the drained land of which we have spoken, the herds-grass stood more than *four feet high*,—and came without sowing any seed to bring it.

We believe the whole matter of drainage is too much neglected. It will certainly bring money to the pocket of the farmer, but as it comes indirectly, the sources from which it springs are lost sight of, and the work is neglected.

On this subject, we have quoted various authorities to sustain the opinions which we have from time to time advanced, and among others that of Mr. John Johnston, who resides near Seneca Lake, in the State of New York. He says tile draining pays the expense in two seasons, sometimes in one. In 1847, he bought 10 acres of land, a perfect quagmire, to get an outlet, and in 1848 harvested 80 bushels of corn per acre, which paid for the land and drainage. Another piece of 20 acres was drained at an expense of about $30 an acre, and the first crop was over 83 bushels per acre, where before not more than 10 were harvested. A part of the field averaged 94 bushels per acre, this being 84 bushels over the former yield. One-half of the manure used before draining was found ample, for maximum crops, so beneficial was the removal of water.

Mr. Johnston says he never made money till he drained, and that occupiers of comparatively dry land will find advantage in draining.

His farm comprises about 300 acres. His yield of wheat is from 30 to 40 bushels per acre. He uses salt at the rate of five bushels per acre.

He recommends farmers not to use over 2-inch tiles for lateral drains. He makes his main drains 6 or 8 inches deeper than his laterals. An error he fell into was in having too many drains on low land, and too few on high land. To drain effectively the supply of water above must be cut off, then fewer drains will be needed below. Here is the secret.

These opinions come from one of the most thoroughly practical men in this country; a man who is independent, and who has acquired his means through an intelligent, scientific industry.

## TRIAL OF MOWING MACHINES.

It is now some twelve years since the mowing machine was introduced among us, and, somewhat later, became common on New England farms. The prejudice that so long existed against them has been obliged to yield, so that now, when help is scarce and high, the most inveterate advocates for sticking to old "notions" and the old scythe are quite willing to *borrow* a mowing machine for a few days, to say the least. They will condescend to do this, when the practical mower demands two dollars and fifty cents per day, and board, for his labor!

Since the introduction of the first rude and imperfect machine, great improvements have been made in them, and new ones devised of more beautiful and convenient form, more substantial in structure and yet of much lighter draft, and less weight of metal and wood.

We have no means at hand of ascertaining how many different patterns, or patented machines have been introduced and recommended, but the number must be quite large. A manufacturer of them recently informed us that he thought he could enumerate *fifty* different kinds! Out of the ten or twelve kinds that we have tested, or seen under trial, we could not, conscientiously, recommend more than one-half of them, and this comparative number will probably hold good in all that have been made. If such is the case, the loss to the farmer in purchasing machines unfit for the purposes for which they were constructed, must be very large. The money loss is not all. Disappointment, delay, vexation, and want of confidence in all farm-machinery will come in to swell the aggregate loss. This should no longer continue. Some means should be suggested to ascertain for a certainty what really good machines there are,—machines that have stood the test of several years trial,—and when this is done, the fact should be made known to all the farmers in the land.

In order to get at the greatly needed information, we suggest that a grand trial be had of the different mowing machines that can be got together, during the coming haying season, where all interested may attend and judge for themselves which is the best machine among them all, and the one

which they should purchase. We would have no premiums. Let the trial be to ascertain which is the best machine, and let the farmers assembled be the judge of that fact, after having witnessed the trial, unbiassed by the report of committees or judges, who may be swayed by one consideration or another in favor of a machine which is not in reality the best.

In a trial like this, the choice of a large majority of those witnessing it would be quite likely to settle upon a few machines, and this judgment would be of great value to the purchaser, as the fact would be reported to every part of the land.

The trial should take place on the line of some railroad, and not far from it. Perhaps Western New York would be as convenient a locality as could be selected,—near Albany, or beyond, on the line of the New York Central Railroad. Shall it be done?

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*For the New England Farmer.*

## SHEEP HUSBANDRY---No. 2.

When we ask the question, "Why has sheep-raising fallen off to such an extent in this State?" we always receive the ready-made answer, "That it does not pay." But when we ask why it does not pay, we do not always receive so ready an answer; but we are frequently told that wool does not bring a price sufficiently remunerative. Yet it is a fact that wool, for a number of years, has averaged a higher price in this country than in England, while the American farmer does not, on the average, pay more purchase money for his land, than the English farmer does annual rent for his, and he makes raising sheep one of the most profitable branches of agriculture.

That it has not paid we do not donbt, and one cause we noticed in our last, and showed that that cause was removed.

Another very important cause is the want of that careful attention which can only ensure success in any business.

In too many instances, the farmer, after obtaining a good flock of sheep, has almost left it to itself; he has not taken the pains to keep up his breed that he takes with his other cattle.

If he has fed them well, and *cared* for them in a proper manner, yet he has sold his lambs year after year, and continued to breed from his old ewes; he has kept his old buck, or others raised from his old flock, and that, too, from degenerated ewes, which practice would, in a few years, not only deteriorate the quality of the wool, but would also reduce the quantity. It would also reduce the size of the lambs, and seriously affect their fattening qualities, and would also reduce the size of his sheep, and this would manifest itself soonest and most seriously in the best breeds.

We may expatiate much on the different breeds, we may grow eloquent in favor of this, that or the other one, but unless proper attention is paid to those principles which produce and perpetnate good breeds, we talk and write in vain.

Much has been said and written on in-and-in breeds; but when this is successfully practiced it is with the very best progeny of the best parents on both sides. This, to be successful, must be conducted on scientific principles, and none but the skillful should ever attempt it. On the other hand, among our every-day farmers, and with sheep particularly, where the flock is drained of all its vigor by the constant sale of lambs, it is a prolific source of evil; and when we hear persons advocating in-and-in breeding, we always feel like saying, "Please state its limitations," preserve your best lambs, both male and female, and breed from no others.

We noticed a lamb last fall whose fleece resembled hair; it was bought from a flock whose owner has sold his lambs from year to year, keeping only such as the butcher would not buy, and breeding in-and-in. This man could not afford to preserve a good lamb, or buy a good buck. The form of this lamb was in perfect keeping with its fleece, its back sharp instead of broad, its ribs flat and its neck long.

All our different breeds of sheep have their origin from one source—the wild, hairy animal, still found upon the mountains of Asia Minor, Barbary, Greece, &c., which when brought under the fostering care of man, the rank, hairy fibres gradually disappear, while the soft wool around the roots, which is scarcely perceptible at first, becomes singularly developed. The male undergoes this change more rapidly than the female, and always continues to possess far more power in modifying the fleece of the offspring than the female parent. Always bear in mind, however, that the age and vigor of the parents will do much to modify the general law. By paying strict attention to this general principle, changing and crossing of rams, we have obtained such a variety of breeds, and have so far advanced from the parent stock, that the relationship appears almost obliterated. But though there appears such a wide difference between our best domestic breeds and their wild origin, yet there is always a tendency upon the part of the fleece of the domesticated animal to return to that of the wild animal. This is most rapid in the ewe. She will not be neglected by man, if she is, her fleece will suffer, and under the very best of care fleece of both the male and female deteriorates every year. It is finest, strongest and heaviest the first year, and it continues to become lighter and coarser every year, and the more lambs the ewe has the faster the fleece deteriorates, consequently it will be found that it is not the ewe that produces most lambs in a year that is eventually the most profitable.

We have in our possession two fleeces, one black and the other white—their staples measure about twelve inches—the greater portion of both is hair, and when drawn out very much resembles the hair from a cow's tail. We showed this a short time ago to an eminent stock breeder, and he asked if was from Africa? Judge of his surprise when told it was raised in Massachusetts!

The first manifestation we have of deterioration in the fleece is the increase in the long hairy part that grows upon the hind leg. In young, well-bred sheep, this is scarcely perceptible. In the old, degenerate sheep, it extends to the body, and the top of the staple is full of coarse hairs, with a white hair in the bottom called a kemp. When sheep are thus far run out, it is about as easy to produce a good flock from the wild species as from them. The wild ones would have health and vigor on their side, which the *domesticated* would

not have. An old ewe's fleece, not other ways degenerated, is known by its shortness, coarseness and thinness of staple, with a dry, harsh feeeling, cotted and felted bottom; or, if this is not the case, the staple is rendered very weak and tender.

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*For the New England Farmer.*

## A "NOTE" FROM VERMONT.

### Spring-time---What it Demands.

MESSRS. EDITORS:—It is now with the farmer the most important and busy season of the year,—seed-time *and* harvest. Mid spring-time most of all demands the earnest thought and labor of the husbandman. Such it is with us at the present time. The season thus far is full two weeks in advance of that of last year, sowing is nearly done, potato planting considerably advanced, and the planting of corn will soon be at hand. And, notwithstanding the price of labor consequent on the scarcity of field hands the present season, I think full an average of ground will be tilled,—machinery so far as practicable being employed to supply the deficiency in hand help.

### The Weather.

The weather at present date is very favorable for the rapid growth of vegetation. Such copious rains, followed by a warm, genial sun, are enough to give life and animation to every living thing. It is shower and sunshine that make vegetation *laugh*—laugh and *grow fat* in an increased fullness of the products of the field.

### Thunder Shower.

While I write, the thunders roll in the distant west, foretelling in unmistakable tones an additional showering of Mother Earth, the farmers' bountiful benefactress. Well, we'll welcome it as the "mercy drop" to vegetable growth, and the "elevating" element to its final perfection.

### "Later."

It rains and hails, with vivid lightning and heavy thunder. How cool and refreshing! How green the grass! Nature seems renewed.

I. W. SANBORN.

*Lyndon, Vt., May* 10, 1864.

JUNE THE TIME TO PRUNE FRUIT TREES.—E. D. Wright, in the *Genesee Farmer*, contends that June is the proper season to prune fruit trees, offering as the ground of his faith the following reasons, which we put in a condensed form:

1. A limb being cut off before the growing season, both wood and bark will dry and die back where the cut is made. What it thus loses while waiting for the growing season must be made up by the growth of *new wood* when that season arrives. Nature undertakes to heal the wound by growing it over with this new wood, but much time is lost before it will grow up from the point where life still remains, between the bark and the wood, to the place where it would be if the cut were made in May or June, instead of February or March.

2. Where a limb is cut off before the growing season, and before or at the time of the spring flow of sap, the sap must come to the surface where cut, and there be evaporated or fermented, leaving the wood sour and lifeless, and liable soon to rot.

*For the New England Farmer.*

## METEOROLOGICAL RECORD FOR APRIL, 1864.

These observations are taken for and under the direction of the Smithsonian Institution.

The average temperature of April was 42°; average midday temperature 48°. The corresponding figures for April, 1863, were 43° and 52°. Warmest day the 27th, averaging 52°; coldest day the 5th, averaging 27°. Highest temperature, 62°; lowest do., 16°.

Average height of mercury in the barometer, 29.22 inches; do. for April, 1863, 29.23 inches. Highest daily average, 29.47 inches; lowest do., 28.88 inches. Range of mercury from 28.81 inches to 29.48 inches. Rain or snow fell on thirteen days; amount of snow 17 inches; amount of rain and melted snow, 4.10 inches. Nine stormy days, with 2 inches of snow, and 1.92 inches of rain and melted snow, in April, 1863. There were two entirely clear days; on seven days the sky was entirely overcast.

On three different occasions during the month, the winds have run high. The difference of temperature, also of rain and snow, between April this year and last, will be noticed with interest.

Latitude 43° 22′ N. Longitude 72° 21′ W. Height above the sea 539 feet.

Seeing some meteorological summaries and comparisons in your columns, from a Brandon, Vt., observer, it occurred to me that some few items from my own records would be interesting in themselves, and also as comparing them with those from Brandon.

I shall consider the winter to include November and March.

| *Winter of* | *Av. Temp.* | *Amt. of snow.* | *Rain and melted snow.* | *Barometrical average.* |
|---|---|---|---|---|
| 1859-60. | 26.8° | 64 96 ins. | 9.71 ins. | 29.28 ins. |
| 1860-61. | 27° | 115.25 " | 17.85 " | 29.214 " |
| 1861-62. | 22.8° | 105 " | 15.02 " | 29.196 " |
| 1862-63. | 27° | 74.25 " | 14.22 " | 29.318 " |
| 1863-64. | 28.4° | 84.75 " | 16.37 " | 29.248 " |

Suppose we now take the months separately.

NOVEMBER.

| | 1859 | 1860 | 1861 | 1862 | 1863 |
|---|---|---|---|---|---|
| Average temperature | 37° | 40° | 36° | 37° | 40° |
| Average midday temperature | 47° | 45° | 40° | 42° | 45° |
| Barometrical average | 29.37 | 29.15 | 29.11 | 29.25 | 29.22 |
| Amount of snow | 3.75 | 6.00 | 10.00 | 7.50 | |
| Amt. of rain and melted snow. | 1.87 | 3.28 | 1.54 | 1.05 | 3.55 |

DECEMBER.

| | | | | | |
|---|---|---|---|---|---|
| Average temperature | 18° | 22° | 27° | 25° | 22° |
| Average midday temperature | 23° | 27° | 33° | 30° | 27° |
| Barometrical average | 29.33 | 29 25 | 29.29 | 29.28 | 29.36 |
| Amount of snow | 30.56 | 43.25 | 17.00 | 11.00 | 17.50 |
| Amt. of rain and melted snow. | 3.57 | 3.58 | 1.90 | 1.59 | 4.00 |

JANUARY.

| | | | | | |
|---|---|---|---|---|---|
| Average temperature | 23° | 17° | 19° | 27° | 22° |
| Average midday temperature | 30° | 22° | 23° | 32° | 28° |
| Barometrical average | 29.26 | 29.23 | 29.23 | 29.35 | 29.22 |
| Amount of snow | 7.75 | 34 50 | 29.00 | 26.75 | 14.00 |
| Amt. of rain and melted snow. | 0.48 | 3.97 | 3.25 | 3.66 | 2.35 |

FEBRUARY.

| | | | | | |
|---|---|---|---|---|---|
| Average temperature | 21° | 26° | 19° | 22° | 26° |
| Average midday temperature | 27° | 33° | 27° | 29° | 32° |
| Barometrical average | 29.31 | 29.21 | 29.25 | 29.41 | 29.31 |
| Amount of snow | 16.25 | 15.50 | 31.00 | 14.50 | 14.50 |
| Amt. of rain and melted snow. | 2.28 | 2.98 | 3.10 | 3.12 | 1.75 |

MARCH.

| | | | | | |
|---|---|---|---|---|---|
| Average temperature | 35° | 30° | 32° | 24° | 32° |
| Average midday temperature | 41° | 36° | 39° | 32° | 36° |
| Barometrical average | 29.14 | 29.23 | 29.10 | 29.30 | 29.13 |
| Amount of snow | 7.25 | 16.00 | 18.00 | 15.00 | 38.75 |
| Amt. of rain and melted snow. | 1.51 | 6.50 | 4.82 | 4.80 | 4.72 |

I have here given the amount of rain and melted snow which indicates the real amount of water which has fallen during the given time. I give the midday temperature, because by it we can

judge somewhat how the cold came; whether in *very cold nights* or a *steady low range* day and night. Thus a low, general average, and high midday average would indicate cold nights. Where these two averages ranged near together the indication is that the cold was steady. Many other deductions can be made by study of such a table as the above. The table enables us to judge correctly as to the "warmest winter" or the "coldest," the wettest or dryest, &c., so often remarked without much thought. A. C.

*Claremont, N. H.*

## CROSSING ANIMALS.

CLINE, who is generally regarded as good authority in such matters, remarks that "any improvement by crossing must depend entirely upon the selection of a well-formed female—larger in size than the usual proportion between females and males; and let the male be rather small, with good points."

A late work on agriculture, published in England, contains the following upon the subject of crosses:

"The desire to obtain a *larger* race by crossing, has been very generally attended with evil consequences; the chief aim ought to be to improve the *form*, leaving the increase of size to be the result of a union of larger breeds of cattle."

Again the author says:

It may be desirable to improve the *form* of a native breed or race, but at the same time, it may be very injudicious to attempt to change their *size*, for the size of animals is commonly adapted to the soil and climate which they inhabit. Where produce is nutritive and abundant, the animals are larger, having grown proportionally to the quantity of food, which for generations, they have been accustomed to obtain; but where the produce is scanty, the animals are small, being proportioned to the quantity of food which they were able to procure; and of these contrasts, the sheep of Lincolnshire and Wales are samples—the Lincolnshire sheep would starve on the mountains of Wales. Crossing the breeds of animals may be attended with bad effects in various ways, and that, even when adopted in the beginning on good principles; for instance: Suppose some larger ewes than those of the native breed were taken to the mountains of Wales and put to the bucks of that country; if these foreign ewes were fed in proportion to their size, their lambs would be of an improved form, and larger in size than the native animals; but the males produced by this cross, although of good form would be disproportionate in size to the native ewes, and therefore, if permitted to mix with them, would be productive of a starveling, ill-proportioned progeny.

AGE OF THE BIG TREES OF CALIFORNIA.—A count of rings in the wood of one of the big trees of California, cut down several years ago, shows that it was *not more* than 1225 years old. It was 23 feet in diameter.

TRY experiments sparingly, but liberally withal, where improvement of the land may be promoted.

## THE BOBOLINK.

Where the pheasant late was drumming
With her brown and spotted wings;
Where the velvet bees are humming,
Where the ox-eyed daisy swings—
The gay bobolink is coming,
With his song the welkin rings.
His coat is black as night,
His epaulettes are white;
A meadow bard is he,
Minstrel of liberty.

Hear the chorus of the rover
As he sings upon a reed,
On the thistle, in the clover,
On the tip-top of the weed,
On the elm-twig bending over,
Singing when he husks the seed.
Where the soft cotton grows,
As white as winter snows,
He never sang the lay
That charms the ear to-day.

How soft and tender is the twitter
Of this meadow minstrel gay!
How jubilant the wings that flitter
While he sings his roundelay
Above the still and faithful sitter
Upon her nest of wool and hay!
When the glad husband sings,
His wife, with folded wings,
Hid in the grass and flowers
Forgets the fleeting hours.

GEORGE W. BUNGAY.

*For the New England Farmer.*

## SICKNESS AND LOSS OF SHEEP.

MESSRS. EDITOR:—In the *Farmer* of May 14th was an article from O. W. True, on "Sheep." I can say with him that they have not wintered as well as common, and many have died. The losses do not seem confined to large flocks altogether, for some small flocks of eight, fifteen, and twenty, have suffered more or less, losing from three to twelve, while larger flocks have lost more heavily. Some farmers in this vicinity have lost as many as twelve, thirty, and even one hundred.

The difficulty is mostly grub in the head,—there being only a few cases of scours. I have known of some to open the head and find eight and nine grubs, and in many cases the sheep would show no signs of sickness until within a short time of its death. I think if sheep are taken in season and treated as recommended in the *Farmer* some time ago, (in March, I should think,) for grub in the head, they may be cured. I have known of a number being cured. In some cases the grub would come out on the swab. Lambs have not done as well as usual, and must command a good price. A READER.

*Belknap County, N. H.*

SENSIBLE MAXIMS.—Never taste an atom when you are not hungry; it is suicidal.

Never hire servants who go in pairs, as sisters, cousins, or anything else.

Never speak of your father as "the old man."

Never reply to the epithet of a drunkard, a fool, or a fellow.

Never speak contemptuously of womankind.

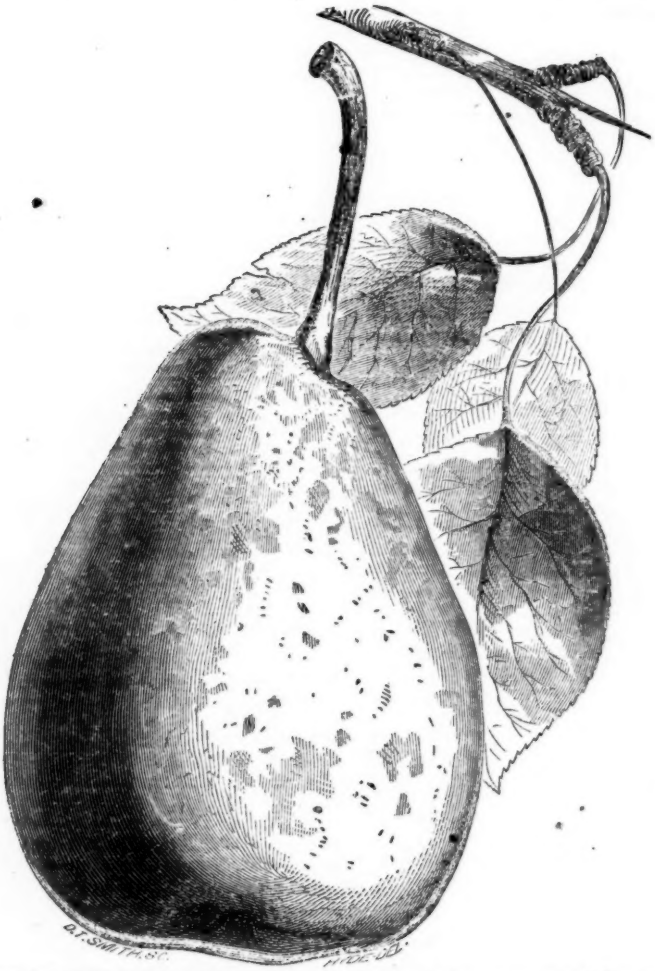
Never abuse one who was once your bosom-friend, however bitter now.

Never smile at the expense of your religion or your Bible.

Never stand at the corner of a street.

Never insult poverty.

Never eat between meals.



## THE "WHEILDON" PEAR.

The annexed drawing is of a new variety of Pear produced at Concord, Mass., (which seems to be highly favored in the production of new varieties of fruit,) in the garden of Wm. W. WHEILDON, Esq., to which, by consent, his name has been given, and which promises to be a valuble addition to our native pears. Mr. Wheildon has furnished us with the following history of the tree and description of the fruit:

The stock of the WHEILDON PEAR is a seedling, and, when transplanted to the spot on which it now stands, was of the size of an ordinary walking cane. Having received some injury after it was budded and not growing well, I cut it down to the ground below the bud. Several shoots soon started from the stock, and two of them, (lest one should be accidentally broken off,) were allowed to grow for two or three seasons, when one was taken off close to the ground. The foliage and growth were so promising that I decided to fruit the natural shoot which indicates its uncultivated habit by its thorns. It grew vigorously and strong, resembling in growth and form a young elm. The first year of bearing, I think, was 1860. The fruit was small, not larger than a hen's egg, but sweet, tender, juicy, and of pleasant flavor.

The next year the fruit was larger, light green in color, more pyriform and generally of improved quality. The third year of bearing, 1862, still further improvement in the size and quality of the fruit was observable, and specimens were exhibited at the Horticultural Exhibition of that year, but as this society seems to give no attention to new varieties of fruit either by premium or notice, it attracted no attention. Specimens were also exhibited at the exhibition of the U. S. Pomological Society, in Boston, the same season, and not being sufficiently ripe, were reported upon by the committee as "promising well." It grows in clus-

ters and has a rugged appearance, somewhat like the Duchess d'Angouleme. The mature fruit of this year was very well spoken of by Hon. Marshall P. Wilder, Mr. Downing, of Newburg, N. Y., Mr. Brill, of Newark, N. J., and Mr. F. R. Elliot, of Cleveland, Ohio. The latter gentleman took from the exhibition of the Pomological Society a specimen, which he ripened, and speaks of it in a letter of March, 1864, as follows:

"On my arrival in Washington, about one week thereafter, I found on examining my specimens of fruit, which I had in my valise, that this "Wheildon" was just in condition, and then and there I cut it, and made a drawing and description, and remember very distinctly that, as compared with quite a number of other sorts at the same time, it was very superior in quality: juicy, buttery, sprightly, aromatic, pleasantly sweet, and, according to pomological rules, 'best.' I have been looking for my drawings, but having moved since that time, my book has got mislaid, and just now I cannot find it."

In 1863, the tree bore another full crop of fruit, and the accompanying engraving, which is an accurate drawing of one of the specimens, sufficiently indicates the continued improvement of the fruit. The produce of this year was generally handsome in size and form, and was approved as a pear of fine character, and as possessing qualities which will render it desirable for cultivation and give it a high rank among our hardy native varieties.

The pear is light green in color, becoming yellowish in ripening, flecked with russet and pink; flesh dull white; very sweet and buttery, with a peculiar aromatic flavor. [A more full description will be given from the fruit of the present season.]

## THE MANGOLD WURTZEL.

The practice of raising roots as winter feed for stock has been growing in favor with many farmers for several years. Those who have tried it—and have been tolerably successful in producing crops—would be unwilling to go back to dry fodder as the entire winter feed. Many years ago, potatoes were considered as nearly indispensable, by good farmers, for a portion of their stock,—but since the prevalence of the "rot" among them, and a gradual decrease in the amount of crop, their culture has been so limited as to afford scarcely more than a supply for the table, with a portion of inferior ones for swine.

Since the falling off in the potato crop, the carrot has been introduced and large quantities raised for cattle, horses and swine. Its cultivation, however, is more nice and expensive than the potato or mangold, so that it is not produced much beyond what is required for horses,—for whom it is found to be healthful and better, as a part of the feed, than an equal money value expended entirely in grain. Many stable-keepers prefer fifty pounds of carrots and fifty pounds of grain, to one hundred pounds of the grain alone.

The cultivation of mangold is easy and cheap. The soil should be a generous one, well drained and thrown up lightly with the plow. After it has been harrowed, furrow out a moderate trench, scatter fine manure into it, cover the manure slightly with fresh soil and drop the seed. The seed should be eight or ten inches apart, as a single seed will sometimes throw out three or four shoots; cover them half an inch if the soil is quite moist, and a little deep, if rather dry. Some cultivators turn two furrow slices together over the manure, and sow upon the ridge. This is not necessary, unless the season is a wet one, or the soil is naturally quite moist. The plants should stand ten or twelve inches apart, and the rows two and a half to three feet, and if all things are favorable, their leaves will cover the whole ground. Cultivation should be thorough through all the early stages of their growth, so that the soil shall be light, and have no weeds upon it, after the leaves have grown to be a foot in length, as the horse and implement used would be likely to injure them afterward.

As they grow principally out of the ground, and reach a large size, they are easily harvested and put away for winter use. A half bushel of them per day for a cow, run through a cutting machine, is as economical as any fodder that can be used. Sow during the first ten days in June.

## BEET SUGAR IN THE WEST.

At Chattsworth, near the Chicago Branch of the Illinois Central Railroad, experiments have been in progress to which Western men, interested in the highest development of the agricultural resources of those great prairies, have looked with no little anxiety, and much hopefulness, for results. Some circumstances occurred in experimenting, in the state of the weather, or the want of proper machinery, that prevented the manufacture of a large crop of beets produced on the Chattsworth farm. At length, difficulties were overcome, and all concerned were delighted to find that the beets raised there abound in saccharine juices, and that the results obtained are in every respect encouraging. The editor of the *Prairie Farmer* saw the process, which is, briefly, as follows:

The beets are washed, topped, decayed parts cut away, or the whole discarded, if imperfect. A toothed cylinder, two feet in diameter, driven at a high rate of speed, is used as a grater. The beets are fed up to it by a pair of plungers. The pulp and juice fall below in an iron tank, fine and white as snow. Two hundred pounds of the pulp is put in a centrifugal machine at once, and the juice separated from it by centrifugal force in a few moments. The juice goes thence into clarifying tanks where it is clarified preparatory to

evaporation. In these recent experiments, no bone filters were ready, and hence other methods were resorted to to defecate the juice. The evaporation was done both in a kettle with steam coil, and on sorgho evaporators. The editor says of the first experiment: "When it had reached a consistency supposed to be right for granulating, it was taken off and set in a warm room for the night. With many anxious feelings we approached the vessel holding it the next morning, when, to our *great delight*, we found the whole mass had crystalized from top to bottom, showing large and splendid crystals of sugar, which, after standing twenty-four hours longer, was allowed to drain. No more than twenty per cent. of it drained out, much of which was sugar. This would have been less had it been allowed to stand longer."

In former volumes of the *Monthly Farmer*, the reader may find several articles on the economy of using the beet to obtain sugar, and the modes by which the process is to be conducted.

At this time of high prices, when a barrel of good white sugar costs something more than *fifty dollars*, would it not be well for many of our farmers to sow the sorghum to a moderate extent, and reduce its juice to syrup for family use. This was done several years ago, when molasses sold for one-half what it is bringing now, and it was then thought, that, under improved modes of extracting and boiling the juice, a sweetening might be obtained by a large number of our people at an economical cost. It is now made at the West with success and profit, and the probability is, that they will produce a large surplus the present season.

The only way in which we can learn what can be done in this respect is through numerous trials by individuals in a small way, as well as by associated effort on a large scale, with all the appliances necessary to perfect success. In a small way, the fact can be established, whether the beet and the sorghum contain a sufficient amount of the saccharine quality to make their cultivation an object for the purpose of obtaining sugar. A secondary object would be the large amount of matter left for feed for cattle after the juices are extracted from the beet. Perhaps paper might be manufactured from the "bagasse," or remainder of the sorghum.

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ERADICATION OF THE OX-EYE DAISY.—J. J. Thomas states in the *Country Gentleman* that on a farm which he lately visited in Pennsylvania, the ox-eye daisy has been so thoroughly eradicated that not a plant could be seen, though it is generally abundant in the neighborhood. The mode practiced for its extirpation is to plant two hoed crops in succession, usually Indian corn, both being well manured, to be followed by wheat and seeded by clover. The few weeds which show themselves are dug up.

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IT requires the death of 8,300 elephants annually to supply the demand for ivory in London.

## BRECK'S BOOK OF FLOWERS.

There are few of the incidental employments of life that have a more happy tendency upon both body and mind than the cultivation of flowers, and a tolerably correct knowledge of their names and habits. Their great variety, beauty and fragrance have attractions for all. The gross in manner, the impure in habit, and even the hard and grasping heart, wrapt in self and forgetful of others, are all happily affected by their presence. Everybody likes flowers.

The infant, too young to express its admiration in words, will lie upon its mother's lap and gaze long and earnestly at the vase of flowers upon the centre table, or the single rose that graces as well as perfumes the room. Girls and boys pluck wild flowers, and adorn their sunbonnets and hats, and look handsomer and feel better for such adornment, while they make the woods echo with their glad voices.

The betrothed maiden places the half-opened rose-bud upon her bosom on her wedding-day—fit emblem of half-revealed virtues of patience, gentleness, charity and loving kindness, which are to be developed day by day in her new sphere of affectionate duty.

*Everybody* likes flowers! The aged man,

"the lean and slippered pantaloon,"

pauses on his crutch and contemplates the *sweet briar* blossom by the way-side, and is reminded of her who was his stay on earth, and now his guardian angel in heaven. He plucks it, gazes upon it as *her* favorite flower, drops a tear upon its trembling petals, and finds new strength for the battle of life.

So we enshrine the dead with flowers, and strew them over the green turf that rests upon their bosoms, as sweet memorials of our undying love.

In his touching story of *Cymbeline*, Shakspeare makes Arvirago say,

——"With fairest flowers,
Whilst summer lasts, and I live here, Fidele,
I'll sweeten thy sad grave; thou shalt not lack
The flower that's like thy face, pale primrose, nor
The azured harebell, like thy veins; no, nor
The leaf of eglantine, whom not to slander,
Outsweeten'd not thy breath."

*Cultivated* flowers are evidences of high civilization,—they are a sort of floral thermometer, indicating the degree of intelligence and refinement which a people have reached. And those indications are as significant as the evidences afforded in architecture, painting, poetry, or any of the sciences.

Flowers are *refiners*. As gold comes from the crucible of the chemist rich and pure, so a garden or conservatory of flowers, or even the single pot on the kitchen window, refines the heart, sweetens the affections, and teaches us lessons of love and duty in every petal that is thrown open to the sun.

Children, reared amidst flowers, and encouraged to learn their names and study their habits, are more likely to be pliable and attractive, and to possess greater refinement of feeling and expression, than those deprived of the lessons which they may impart. The love of flowers "is the love of nature in detail; it is a union of affection, good taste and natural piety." "Was a cruel, unfeeling or selfish man ever known to take pleasure in working in his own garden?" If Mistress Eve—a long time ago—had not made a sad mistake in Eden, we should be ready to say that the tempter never found a victim in the garden amid breathing and expanding flowers. But she *did* eat the apple in that

——"place
Chosen by the sovereign Planter, when he framed
All things to man's delightful use; the roof
Of thickest covert was inwoven shade,
*Laurel* and *myrtle*, and what higher grew
Of firm and fragrant leaf; on either side
*Acanthus*, and each odorous bushy shrub,
Forced up the verdant wall; each beauteous flower,
*Iris* all hues, *roses* and *jessamine*,
Rear'd high their flourished heads between, and wrought
Mosaic; underfoot the *violet*,
*Crocus* and *hyacinth*, with rich inlay
Broider'd the ground, more colored than with stone
Of costliest emblem."

We have said that *everybody* loves flowers. Were we wrong? Lord BACON did not disdain to lend his mighty intellect to their culture. ARIOSTO took deep pleasure in his little garden, and we wish space would permit us to relate some of the charming things that occurred there.

COWPER and EVELYN, COWLEY, POPE, LORD PETERBOROUGH and Sir Wm. TEMPLE, all cultivated flowers and wrote about them. The Emperor Diocletian said:

——"trust me not, my friends, if, every day,
I walk not here with more delight,
Than ever, after the most happy fight,
In triumph to the capitol I rode,
To thank the gods, and to be thought myself almost a god."

"Flowers! what associations the word brings to mind. Of what countless songs, sweet and sacred, delicate and divine, are they the subject." They are the steady, impartial friends of all,—and like the influence of a good man, whose presence is felt before it is seen, they shed their fragrance and sweet influences over all of every age and station. They are *everywhere* friends,—whether they bloom in garden, parlor, kitchen, or climb upon trellis-work or rough rock. They gladden the sick room, and cheer the hot and dusty way of the weary traveller. Here the Golden rod nods over the wall, as he passes, and there the *aster*, or *queen-daisy*, bends away from the thicker foliage and peeps into the worn rut, or with his starry eyes looks him full in the face, and greets him with a smile. The ancients adorned the altars of their gods with wreathes of these lovely flowers.

So the *Curled Clematis* forms bowers on the wayside, and by the country people is often called *Virgin's Bower*. See how it lays hold of the alders and young maples with its claspers or tendrils, and mount to the top of the surrounding foliage, to look out at you as you pass along. The French truly name it the "*Traveller's Consolation.*"

We have said that the influence of flowers upon the mind and manner is most happy and enduring. That influence has been no less upon the character of New England farms and homes. Where were seen no enclosed door-yards forty years ago,—where stray cattle and gabbling geese, old wheels, broken carts and rambling wood-piles skirted the house in dire confusion, and huge dogs, as grim as Cerberus, guarded the doubtful way to the door,—now, white palings enclose a spot, sacred to

——"fruits and blossoms that blush
In social sweetness on the self-same bough."

These not only attract and please the traveller, but they stamp the farm itself with the character of intelligence, refinement and taste, and give it an advanced money value. Children, reared there, go forth into the world with buoyant hearts and hopeful spirits, and filled with those sweet affections that soften and mitigate the harsher aspects of life. They are blessings to their race, shedding kindly influences wherever they trade, travel or sojourn—and though far away from the old homestead, among whose friendly trees and flowers they passed their early days, they look to it as the dearest spot on earth, and one to which every lingering affection constantly turns,

"As the *sunflower* turns to its god, when he sets,
The same look that it turned when he rose."

We must pause—and yet we have said nothing of the

"*Amaranths* such as crown the maids
That wander through Zamara's shades,"

nor of the

——"*Anemones*, whose leaves unfold,
With rubies flaming, and with living gold,"

nor of the leafy *Arbutus*, the *Sweet Balm*, *Cardinal Flower*, or *Balsams*, the *Spring Crocus*, the *Chaney Pansy*, or *Heart's Ease*, that Shakspeare, Leigh Hunt and Spenser sing so sweetly about. This was the flower, too, he scattered before Queen Elizabeth in one of her triumphal marches. Hear Spenser sing:

"Bring hither the pink and purple *columbine*
With *gilliflowers*.
* * * * * * *
Strow me the ground with *daffa-down-dillies*,
And *cowslips*, and *king-cups* and loved *lilies*."

There are dozens of others, all too beautiful to be dispensed with,—all too full of lessons of love and duty to be neglected. But we have only room to say, that the parents who desire their children to be gentle, refined in manner, speech and feel-

ing, and become a blessing to the world, should purchase *Breck's Book of Flowers*, and present it to them, now, when the world about us is glowing with the delightful colors, and fragrant with the rich odors of a million unfolding flowers.

## COWS, SHEEP AND HOGS.

[Extracts from the Bi-Monthly Report of the Commissioner of Agriculture.]

*Cows.*—The general scarcity of butter and cheese, and their very high prices at this time, show that the home markets for them demand a larger supply. The increase of cows since 1859 has been 339,784 in the loyal States; but with these, as with other stock, the decrease in Kentucky and Missouri shows that the increase for the rest of the loyal States has been greater than this general increase indicates. The reported decrease of Missouri is, however, less for cows than for most other stock. The general increase of cows from 1850 to 1860 was 36 per cent., whilst our tables show it to be not quite 6 per cent. in the loyal States between 1859 and 1864.

The table published in the last report, page 37, shows that whilst the increase of butter last year was but *one-tenth*, the increase in price was *three-tenths*. The exports of *butter* to foreign markets have been as follows:

| | |
|---|---|
| 1861 | $4,190,745 |
| 1862 | 6,091,831 |
| 1863 | 7,176,648 |

And those of *cheese* as follows:

| | |
|---|---|
| 1861 | $3,181,171 |
| 1862 | 4,673,389 |
| 1863 | 5,603,884 |

Surely, in all these statistics our farmers must see that too much care cannot be given to an increase of cows, and to butter and cheese manufacture.

*Sheep.*—There is no change in our agriculture so gratifying as the increase in sheep. By our table it is 9,242,119, or about 61 per cent., since 1859, most of it being in the last three years. All the stock raising States have participated in it, except Kentucky and Missouri. But the returns from the first show a present increase; and in the latter, that the decrease occasioned by the war has been arrested. The emigration of this stock from one State to another has been unusually great, for the want of cotton created such a demand for wool for home and factory manufacture, that every farmer, great and small, sought to have a flock of sheep, if he had none previously, or to have his old one enlarged.

The increase during this spring will add from four to five millions to the number in January; raising the whole number to nearly thirty millions, or double what it was in 1859 in the loyal States.

But little need be said as to the future markets for wool and mutton. Until a peace is conquered, and a fair crop of cotton is raised, wool will be remunerative, even after it falls considerably in price after peace and before the production of such cotton crop, for the general deficit in textile material is great, as shown in the last report. But with peace will cease the government demand for clothing, whilst the scarcity of beef and pork will make the demand for mutton insure good prices for it. Whether, then, the old ewes, now kept longer for breeding purposes, should be fattened and sold for mutton, and such wethers as have been kept longer than customary, on account of the high price of wool, is a question that will demand the consideration of all farmers, and a careful watching of political events. We shall keep them well advised of every fact connected with these subjects, and of such legislation by Congress as may tend to more firmly establish wool production in the United States.

If, as our supplies of wool increase, the imports of foreign wool shall be checked, and the introduction of foreign woollen cloths be lessened, the wool-grower may rest in better security, than if he is to be subjected to the competition of these, as he was prior to the rebellion.

*Hogs.*—The great destruction of the corn crop last fall by frosts and other causes has caused a decrease of this stock of 911,323. The high price for hogs in 1859 and 1860 created a large increase in the number during 1860. The low price of 1861 caused a great English demand for our pork and lard in 1862, and the advance in prices in consequence encouraged increased production in 1863. But the scarcity of corn not only checked it, but resulted in the decrease just stated.

In determining the state of future markets for pork, a reference to the present home and foreign markets gives every encouragement. As already stated, the number of hogs packed last season was about one million less than in 1862-'63, and they were much lighter in weight. The active demand and high prices for the products of pork indicate that the market will be bare next fall.

## TO CATCH SHEEP-KILLING DOGS.

The country is overrun with worthless dogs—and this is one of the chief reasons why many farmers do not raise more sheep. It is those men who own but little else, who keep the greatest number of dogs; faring scantily at home, these hungry curs roam the fields and make slaughter among the neighbors' flocks. But while candidates for office depend on the votes of these men for an election to the Legislature, few of them possess the independence to vote for any efficient law for the protection of sheep against dogs. It remains, then, for every farmer to employ such means as will protect his own flocks upon his own premises. To do this he has only to make a trap in the form of a "rail pen," similar to that employed to catch wild turkeys, only in the case of the dog, the entrance must be left on the top, instead of the bottom. When your flock is attacked, and a sheep has been killed, proceed at once to lay up a pen, and with every course of rails gradually contract it towards the top, raising it until it is about five feet high, leaving an opening on the top sufficiently large for a dog to jump in with ease. Into the centre of the pen place the carcass of the dead sheep, and remove the flock to some other part of the farm. The first or second night after the attack, the same dog will be quite sure to return for another feast; finding the flock gone, but the carcass remaining, he will enter the pen but will not so readily manage to get out. The owner of the sheep can then satisfy himself as to his guilt or innocence, and act accordingly.—*Valley Farmer.*

IT is calculated that the wool clip of Minnesota the present year will not be less than 500,000 lbs.

## THE HORSE HOE, OR ROTARY SPADER.

During the last summer, we had an opportunity of witnessing the operation of this machine at three different times. Once upon a deep, mellow loam—once upon a tough, inverted sward, free of stones, and once upon a pasture sward, full of cobbles and fast rocks, and in each place it did excellent work, but especially so upon the land where there were few stones. The operation is as follows:

When power is applied, the machine is drawn forward, and the spokes of the perpendicular wheel penetrate the soil and set the horizontal shaft revolving. The result is:

1. The plough *lifts and displaces* the soil in the centre between the rows of plants, to any depth desired, not exceeding six or eight inches.

2. The spokes of the perpendicular wheel penetrate the soil on each side of the furrow made by the plough, and *lift that up*, also, so that a space equal to the whole width of the machine is actually displaced,—and then, as the machine advances, the arms of the horizontal shaft throw up and strike the particles of soil, dashing the lumps to pieces, if there are any, and shaking the fine earth out from among the roots of witch or other grasses! The result of these combined motions is wonderful.

1. The soil is made loose.
2. It is made fine, or pulverized.
3. Much of the grass roots and weeds are thrown up by the teeth on the shaft, and left on the surface.
4. The land is left flat or level.
5. By changing the perpendicular wheels to the *inside* of the shaft—which can be done in three minutes—the soil is thrown into hills.

We saw the operation of this machine on a field that was in sward in the spring, and which was ploughed only six or seven inches deep. It was planted with corn, and the hills laid in squares. The machine was run through both ways. Over a portion of the field, the work was left flat, and then the wheels changed so as to throw up hills, and wherever the machine had been there was, literally, *no work left for the hoe!* The surface was left mellow and even, the grass torn up, and just enough of the damp, light soil thrown in among the stalks of corn to give the whole work the most beautiful and finished appearance. Any boy, or girl, old enough to go along and pull an occasional weed from among the spears of corn, would have finished the work of the field! This was accomplished on sward land, in shallow ploughing, and without disturbing the sod in any objectionable degree.

As to draft we did not see that it was harder to draw than the common cultivator. This machine *is moved upon wheels*, while the cultivator is moved by a dead pull or drag.

We call attention to this new machine now, at the commencement of the hoeing season, so that persons interested may have time to test its powers among all crops that require hoeing, and upon all kinds of land.

Dr. D. COLBY, of Claremont, N. H., is the inventor of the *Horse Hoe*. The proprietors are J. P. UPHAM & Co., of the same place, to whom any inquiries may be addressed.

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*For the New England Farmer.*

## SHEEP HUSBANDRY--No. 3.

Another cause for the falling off in the value of wool, exists in the fact that farmers are so anxious to obtain a large quantity of lambs that they allow their young ewes to come in at a year old, and I have known ewes mothers at eleven months. This is a serious evil; this is hastening the stock rapidly back to the wild state. Long wooled ewes should always be two years and merinos three years old before coming in with lamb; they will have heavier and better fleeces, with longer and stronger staples, a softer and more pliable fibre, less coarse wool on the hind leg, freer from what is termed jar, or coarse hairs running through the staples, and less liable to kemp than if bred from earlier. They will also be longer in running out, or if fatted at a proper time, will fat quicker and at a less cost.

In selecting a buck, great care should be taken not to select from run out stock. Do not take one, whatever the recommendations of breed may be, from a flock in which indiscriminate breeding in-and-in has been practiced.

Never select a twin lamb. This is a very fruitful cause of want of success in sheep husbandry. Although in some cases you may obtain an excellent twin buck or ewe, yet it would be the exception and not the rule. I met, the other day, with a gentleman who had succeeded in obtaining, he said, a fine Oxford Down buck, a twin. He was an intelligent farmer, and said he should never think of breeding from a twin bull or stallion, but thought the same law did not apply to sheep—a mistake which many fall into. The fleece of this yearling ram only weighed six and a half pounds of unwashed wool; it should have weighed at least eight pounds of washed wool, for that breed produces heavy fleeces. And for stock purposes, a long wooled buck with a lighter fleece of good washed wool should not be chosen.

Another prolific source of degeneracy in sheep is in the practice of keeping the twin ewes that the butcher will not buy; and some go further

than this, they buy twin lambs, which the butchers reject, for stock, and sell their own single ones. I do not want it to be understood that I think twin ewes ought never to go into stock, but I do maintain that if the farmer wishes to snceed in sheep husbandry he must make it an exception and not a rule.

Let the farmer yearly renew his stock by saving his best lambs and feeding his oldest ewes; the younger his ewes are when fatted the better his wool will be. The farmer that produces the best wool in this section of country never keeps his ewes for breeding after six years old, but I think it would be an improvement to his flock to take them out at five, particularly those that have had twins three years in succession.

I saw a fleece of wool, a few days ago, that had been sheared from an old ewe. It weighed less than two pounds. It was hairy, short and cotted. While common unwashed wool was fetching fifty cents per pound, the whole of this fleece was not worth fifty cents. She had a lamb which was sold for four dollars; her carcass was good for nothing. It could not be fatted; yet there had been a time when she sheared a six pound fleece, and two or three years old ewes in the same flock were shearing eight pounds of good wool, worth four dollars; their carcass, in the fall, would bring six dollars at the least, the lamb at their side, at the time of shearing, worth four dollars more; making a total of fourteen dollars against four dollars and a half. The cost and care of keeping would be in favor of the youngest ewe, and the risk in freedom from disease would certainly be in favor of the youngest, for, be it remembered, the old ewes are more liable to disease than young ones, and, when attacked, have less power to throw off disease.

In calling attention to this single fact, we wish it to be understood that it is not a solitary instance; we meet with hundreds, and would say thousands, of very similar fleeces in a year, were it not for fear that some of our readers might think us prone to exaggerate.

I am acquainted with two gentlemen who own adjoining farms. Each own a flock of sheep of the Merino and Leicester cross. They both sold their wool to the same person. One had thirty-two fleeces from ewes six years old and upwards, some of them, I have no doubt, eight years old. His wool weighed 94 pounds; four of the fleeces were unwashed, yet averaging less than three pounds per fleece. The other had 36 fleeces which weighed 160 pounds, all washed but one; averaging near four and a half pounds per fleece, and he obtained five cents per pound more for his wool than his neighbor. These were from sheep one and two years old; none over two. They cost no more keeping than his neighbor's, yet the difference in the profits of the two is so apparent that comment are unnecessary.

I know it is a great temptation to the farmer to sell his lambs, and to bring those he raises into breeding as soon as possible, but let him remember that the long wooled part of sheep husbandry embraces three ideas, and his eyes, if he is desirous of succeeding, must be upon all at the same time, namely: wool, mutton and lambs. If his attention is well directed to the first, he will certainly have the second, and not lose but rather gain the third. If the second claims his attention, the first will still be his gain; but should the third win his attention too much, he will be very likely to lose the whole if that attention is directed to the butcher, but if to stock, then he will certainly gain the three.

Whoever saw a cosset with a small carcass or a light or poor fleece of wool? This, if nothing else, would prove what good feed and good care will do for sheep. I do not expect that a whole flock will receive the same care that a single lamb will, but simply introduce the fact to show what good care and attention can and will do. But the fact that they are always larger, and have larger fleeces, and when bred from have large lambs, certainly points in the direction of good feed; and the returns coming from three sources, mutton, wool and stock, give three chances for success to one of failure. The long wooled buck should always be eighteen months old before allowed to run with ewes, and at that age the number should be limited. Merino lambs should be a year older.

Some farmers have an excellent method of dividing their ewes in the fall. Those are allowed the company of the ram early in October, which are intended to produce lambs for the butcher, while those which are intended to produce lambs for stock receive his company later, stock lambs, by this method, costing much less, because requiring much less care; and by selecting the old ewes, which are intended for the butcher, to produce the early lambs, they have the advantage of a month or two longer to feed on grass, after the lambs are weaned, than those which come in later. The *Prairie Farmer* says that an Illinois farmer has his lambs drop in mid-winter in order that his bucks may be ready for service in the fall. Such a system may be profitable to the raiser of the buck, but ruinous to the purchaser of such stock. This is as great a violation of physiological law as to breed from young ewes. Any one purchasing such bucks with a view of improving his stock will be greatly disappointed. If his ewes are as young as his buck he cannot have anything else but degenerate stock. If his ewes are mature and vigorous, the buck, so far as breed is concerned, will have scarcely any influence, and concerning stock, it will be bad; and the buck will never be so good as he would have been had his youth been properly served. TYRO.

## WHAT IS CULTIVATION?

At a recent meeting of the Fruit Growers of Eastern Pennsylvania, held in Norristown, the question propounded above was earnestly discussed. Mr. A. W. HARRISON said:—

Cultivation resolved itself into two divisions. 1st. Mechanical. 2d. Nutritive. The first had, for its object, the improvement of the texture of the soil, by underdraining and pulverization; the second, by adding to the soil the elements taken away or required for the perfection of the growing crops. Thought all soils improved by underdraining: even sandy soils are rendered by it moister in summer, by the condensation of the moist air drawn through the soil to the underdrains. The object of pulverization was to present new surfaces continually to the action of the air. Air and moisture must act together before the oxidation necessary to prepare plant food can go on. The soil must be so pulverized that the particles must

just touch. If too wide apart, moisture cannot act with the oxygen. If we examine a pile of round iron balls, we find rust only where the balls touch. The great object of cultivation, in its mechanical sense, was to pulverize the ground into as many small surfaces as possible, and then to provide for a continued current of fresh air and moisture through it.

Mr. SATTERTHWAIT said some soils could be injured by pulverizing too much. The particles would grind so very fine, that neither air nor moisture could go through.

Judge KNOX agreed with Mr. Satterthwait. Soils that, in common language, "bake," do so through a tendency to this over fine pulverization.

Mr. W. SAUNDERS, also, inclined to this view. Yet thought no one could go wrong if he knew his object. If we want air and moisture in the soil, and if it is too heavy for it, pulverize; but if the other extreme, pulverization, which when wet makes mud, obstructs air and moisture—stop the practice. With a clear object one could not go wrong. One might say, manure was good for soils; but if we wanted leaf growth and succulency, as in the cabbage, we wanted one kind and quality; but if we wanted sound wood and fruit, as in the orchard, manure is quite another question.

In answer to a question, Mr. Saunders added, that his rule for covering seeds, was to regulate it by the seed. A seed ¼ inch in diameter, to receive a ¼ inch of covering; ½ inch, ½ of soil, and so of all others.

## INFLUENCE OF THE ATMOSPHERE ON THE SOIL.

The following paragraphs contain a portion of the remarks made by members of the *Concord Farmers' Club*, upon the influences which the atmosphere exerts upon the soil and crops. The discussion was an exceedingly interesting one, and showed that the members had formed habits of investigation, observation and inquiry.

MINOT PRATT did not undertake to prove that the atmosphere has an influence on the soil, but took it for granted that the *fact* would be generally acknowledged. An observing man can hardly fail to see that some effect is produced; but *how* it is done is not easily discovered by the unlearned. Possibly the *learned* themselves might be somewhat puzzled to explain all the phenomena. But taking it for granted that a beneficial influence *is* exerted, it becomes of importance to know how to derive advantage from it—how to bring the air and soil most intimately in contact. Every one must have noticed the good effects resulting from the frequent hoeing of crops in summer, beyond the mere destruction of weeds. This is more apparent in dry seasons. All crops will stand a drought much better for having the soil thoroughly stirred once a week. This stirring undoubtedly tends to make the surface soil dryer, for evaporation will go on more rapidly in a loose than in a compact soil in a hot, sunshiny day. But the indisputable fact remains that the corn growing in the stirred soil will stand up with its leaves all spread out, even in light, sandy soil, while at the same time, in another field, where the soil has not been so stirred, every leaf will be rolled up. This is sometimes accounted for by supposing that the loosened soil is more capable of absorbing moisture from the atmosphere during the night, but he thinks that the heated surface can hardly take in at night so much as the sun and the plant draw out in the day; so that the benefit is to be considered rather as the result of some chemical action of the air on the salts and organic substances in the soil by which these elements are made both victuals and drink for the growing plants. Benefits follow these stirrings at other times than when parched up with drought. The air being more freely admitted into the finely pulverized earth, promotes a rapid decomposition of the vegetable matter which it contains, so that wherever the roots penetrate they find suitable food and "an abundant supply of the oxygen of the atmosphere to aid in preparing it." In all soils there are also fragments of rock, which, as they crumble and decay, yield fresh supplies of inorganic food for plants. This decomposition of the rocks is hastened by exposure to the air. One old writer on agriculture was so confident of the benefits to be derived from frequent plowings, that he believed land might thus be kept in undiminished fertility for an indefinite series of years, without the application of any manure, and he actually reaped twelve successive crops of wheat, the last equally as good as the first, from the same land, the only fertilizers used being the plow and horse-hoe. One of the good effects of *draining* is supposed to be that, by drawing off the water which saturates the soil, the air is more freely admitted, by which some of the noxious portions of the soil and subsoil are so changed in their character as to become harmless, or even beneficial. Much of this noxious matter is also washed out by the descending rains, and carried off.

This suggests that perhaps the cause of the failure to derive benefit from subsoiling and deep spading, as related at the last meeting, would have been removed by a previous thorough draining. In well drained land, there is, of course, no standing water filling the pores of the soil; this settles into the drains and is carried away, leaving room for the air to enter, and do its work. Whenever rain falls it enters the soil, and more or less displaces the air. But as the water sinks, the fresh air again enters, and is in this way renewed by every fall of rain. And even in long continued dry weather, there is, without doubt, a circulation of air kept up in the soil, by means of changes of temperature, which rarify and condense the fluid, and thus keep it in motion. When by these means the removal and change of noxious matters in the soil has been effected, it would be safer to increase the depth of plowing, in most soils.

DR. REYNOLDS said he understood that aeration of the soil was included in the subject as well as the chemical and fertilizing effects of atmosphere on soil. Indeed they must go together, for without bringing the particles of the soil into contact there could be no chemical action. One effect of draining is to admit air in the place of water. This renders the soil porous and light, and enables the gases given off in the soil, by the decomposition of manurial substances to permeate through the soil, like the carbonic acid gas from yeast in bread, and keeps the soil light, so that roots can traverse it in search for nutriment. Without the presence of the oxygen of the at-

mosphere putrifaction and fermentation cannot take place. There are elements in the soil which have an affinity for the elements in the atmosphere, and when they are brought into contact, they act on each other, and form food for plants, or stimulants which plants need. Frequent stirring of the soil brings these elements into contact. Alkalies present in the soil attract moisture from the atmosphere, and thus enable plants to endure drought. Hence, in a dry time soil should be frequently stirred. Draining, subsoiling and deep culture all contribute to bring the air and soil into contact. This is, then, a practical subject. Plants as well as animals breathe. They cannot live without air. Elements necessary to their life and growth are furnished to them through the medium of the soil also. The atmospheric ocean by which we are surrounded is the great storehouse of nutrition for them as well as for animals. Jethro Tull believed that plants derived all their growth from air and water. In this he was probbly mistaken. But soil hermetically sealed from the air cannot yield nutrition to plants. Organic bodies closed from the air do not decay, and consequently cannot be converted into food for plants.

SIMON BROWN said: Some members may look at this subject as not a practical one. He thought it was practical; as whatever leads us to investigate the laws that are acting upon the matters with which we are called upon to deal, also leads us to enlightened practices. There is little cause for us to discuss the common manipulations of the farm which we have considered many times before, and with which we have become familiar. But by taking a step in advance, and investigating the operations of nature around us, how they are connected with our own labors, and learning what we can gain from them by making the soil ready for their reception, we can scarcely fail to find an increasing pleasure and profit in agricultural pursuits. The essential elements of vegetable productiveness, are *earth*, *air* and *water*. If we can place the first of these, the earth, in proper condition, the others will follow as a natural sequence. That is: when the soil itself is in a favorable condition to receive atmospheric influences, it *will* receive, and be greatly benefited by them, without further agency on our part. For instance: If a field is thoroughly *drained*, and then plowed and pulverized, as is usually done where a good crop of grain is obtained, that field will constantly receive fertilizing influences, that a field undrained will not receive, although just as well plowed and pulverized. When a shower falls upon the drained fields, the water percolates slowly, but constantly, through the whole earth to the bottom of the ditches. It does not rest upon the surface, nor meet with considerable obstruction on its way to the lowest point of drainage. The withdrawal of cold, stagnant water has permitted the air to enter the soil, taking *heat* along with it, so that it has actually became warmed and dried, to a certain extent, and has caused it to occupy less space than it did before it was drained. The evidence of this is found in innumerable cracks or crevices, which may be found to exist through the whole mass of earth, from the surface to the bottom of the drains, even though they go down four or five feet. This is the first effect of drainage, and is the prime operation, on *our part*, to make the land ready for the reception of atmospheric influences. Rain water is charged—in greater or less degree—with salts, as well as moisture, that act an important part in the growth of plants. When, finding little obstruction to such prepared fields, the rains and dews descend freely among the particles of soil, heating or oxygenizing a little humus, starting it into the fermentative process, so that it shall be easily soluble for the young rootlets to take up, or touching a grain of sand, and fitting it to strengthen the tender plants, by covering its outer surface with a coat of mail as brittle as glass itself, such as we see on the stems of wheat and other plants.

But this is not all. Moisture descends in company with these salts, and carries *heat* along with it. It descends freely through the cracks or fissures already mentioned, imparting its warmth as it goes, so that after passing through the soil, and reaching the outlet of the drain, it will often be found 10° *colder* than when it first entered the surface. This moisture is contained in the *air*, held there in solution, too thin and unsubstantial for mortal eye to see, and is continually passing into the soil, and ranging freely through it, as no cold and stagnant water is present to prevent its passage. Here, then, are two most important atmospherical operations upon soil that is fitted to receive them: One actually imparting elements of fertility, and the other supplying a generous warmth through its recesses, with all the kindly influences that are gained from a well-constructed border, or the genial bottom-heat of the hot-bed. Again, we see the action of the atmosphere on soil in times of drought. The atmosphere rests upon the earth with a pressure equal to 15 lbs. to the square inch, and the soil, being light and porous, greedily receives this moisture, and passes it along from particle to particle, distributing the ammonia and other salts, and its heat as it goes. At length, it reaches a point where the soil is cooler than itself, and is at once condensed into *water*, and thus the atmosphere waters the well-drained soil through a pinching drought, and brings its plants to perfection.

J. B. MOORE thinks other members have given much credit to the atmosphere, that should be given to other influences, such as drainage, frost and pulverization of soil, and thinks it impracticable to use the atmosphere to any advantage.

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DINNER AS AN EDUCATOR.—You will find that a great deal of character is imparted and received at the table. Parents too often forget this; and therefore, instead of swallowing your food in sullen silence, instead of brooding over your business, instead of severely talking about others, let the conversation at the table be genial, kind, social and cheering. Don't bring disagreeable things to the table in your conversation any more than you would in your dishes. For this reason, too, the more good company you have at your table the better for your children. Every conversation with company at your table is an educator of the family. Hence the intelligence and the refinement, and the appropriate behavior of the family which is given to hospitality. Never feel that intelligent visitors can be anything but a blessing to you and yours. How few have fully gotten hold of the fact that company and conversation at the table are no small part of education. —*Dr. Todd.*

IMPORTANCE OF THE CLOVER CROP.

The hay crop of New England is of immense value, and that value is annually increased by the introduction of new varieties of grass, and by quicker and better modes of making and securing the hay. The consumption and waste of hay, by horses in the army, has recently been immense, so that this, combined with the plentifulness of money, has brought it up to the unprecedented price of *forty dollars* per ton!

Clover hay is not generally considered so good for horses as timothy and red-top. Such, however, is not our opinion. We believe that clover, when properly managed, makes the best hay for any stock, that we produce, and is less exhausting to the soil than the production of most grasses. "It not only makes up the variety necessary to keep cattle in health, but its yield is large and profitable; it takes less from the soil and more from the atmosphere, than most other green crops, and the portion remaining in the soil contains material to improve its mechanical condition, so as to progress the inorganic constituents which it elevates from the subsoil after subsoil plowing, and is almost sure of success on any soil worthy of cultivation." It has been ascertained that a large number of tons of roots are left in the soil, per acre, after a heavy crop has been cut off. This mass of vegetable matter must be of essential service to the soil, because it is just what most soils need, and is intimately scattered through every portion of it, where it decays in the very presence of a thousand roots of succeeding plants, all ready to take it up. It would be impossible for us so to place nourishing substances in the immediate neighborhood of the roots which we desire to have fed. Nature can do it infinitely better than we can. Let us, then, employ the means, and leave it to her to carry out the awaiting results.

One of our correspondents, "W. E. J.," of Hatfield, in a communication to us some years ago, says that "clover is, according to the laws of vegetation, a great extractor from the atmosphere, and is abundantly supplied with leaves which are spread to the wind, and take in carbon and nitrogen; its roots are thrust into the subsoil and take up the salts which other plants do not reach. Here we have mineral elements combined. When the clover is turned under, and we plant with corn, it has an abundance of nutriment necessary for its growth. Oliver Marcy, in an address upon agriculture, says, wherever you can get a crop of clover, you may get a crop of corn. If you have nothing but a sand bank, put on something to make your seed catch and stimulate the plant, and everything that is in the soil, air and rain will be brought into the crop. Turn it in, and you have gained much; but cast off the green crops, and you have lost the essential materials which the plants extracted from the atmosphere."

This view of the matter is generally confirmed by WILSON, one of the soundest and most judicious of the English agricultural writers, who says, in his "Farm Crops,"—"The habit of the clover plant is to form large and fleshy roots, which have a tendency always to penetrate deep into the soil, and to seek their supplies of food from the lower stratum. This tendency should always be encouraged in all our cultivated plants. It has a two-fold power of benefit to the farmer—not only have his crops a greater range of feeding ground, but they abstract from the subsoil, and elaborate into their own structures on the surface, the food ingredients which, by the percolation of rain or other natural causes, have been carried down below the range of tillage operations; while, at the same time, their roots being buried deep in the soil, secure to them the power of obtaining moisture from below at a time when the more surface-rooted plants are suffering from the effects of the summer sun and drought." These opinions are entitled to weight, coming as they do from those who have given careful attention to the subject.

Cutting, Curing and Housing Clover.

In harvesting clover, our practice is to mow in the morning, and let the grass remain just as it fell, whether from the common scythe or the mowing machine, until about three o'clock in the afternoon, and then gather up the thinner portions, laying them upon the thicker, and turn the whole upside down. This can be done rapidly with a three-tined fork. In England, they have what they call a "collecting fork," made for this purpose. If the crop is heavy, one of our three-tined forks is as suitable an implement as can be desired. In this condition the crop is left until mid-afternoon of the next day, when it is carefully taken up with the fork, made into cocks and covered with caps. It is kept in this condition forty-eight hours, and then, if the weather is clear, it is thrown open—not spread—to the sun for three or four hours in the middle of the day, and then carted to the barn. All these operations require more care than necessary in securing herds-grass or red top,—but when they are observed, there will be only a trifling loss of leaves, and the hay will be of the sweetest and most nutritious description.

Below we give Wilson's account of the English mode of securing the clover harvest:

The crop is mown with the common scythe, and left lying in the swathes. Here, however, the process differs from that of the ordinary hay-field. Instead of tossing it about either with forks or the "tedding" machine, for the purpose of exposing i

as much as possible to the air, the less the clover is handled the better; all that should be done is to turn the swathes over carefully from one side to the other every day, or oftener, when the weather is suitable, leaving them as open as possible to the admission of the sun and wind. Under ordinary circumstances, in three or four days the juices will have been sufficiently evaporated to admit of forming it into cocks or heaps, and in another day or two it may be safely carted and stacked in the usual way.

Some little care and attention are required throughout the operation. If the cut crop be tossed about in making, the leaves get easily separated from the stems and lost on the field, the stems get bruised and broken, and allow the juices to exude and become oxidized and changed by exposure to the air, while the object of the farmer is to keep them in their natural state, for the purpose of giving flavor and quality to his fodder. In stacking, too, it is desirable that the crop should contain sufficient natural moisture in its tissues to induce a gentle heat and fermentation in the mass, by which the quality of the hay is greatly improved; whereas, if it be carried and stacked too soon, the excess of moisture is always accompanied by an equivalent of heat and fermentation; while, if left out on the field too long, the juices all become dried up, and no heating in the stack takes place at all. Although a certain amount of natural moisture is always desirable at the time of stacking, it is most important that it be free from any surface moisture from rain or dews. Not a forkful should be pitched up until every particle of moisture has disappeared; as, if allowed to be stacked in this condition, mildew and deterioration are sure to be the result.

In the neighborhood of large cities it is very much the custom to sell the clover hay, and load back with stable manure. In other districts, where the clover is intended for home consumption, it is a very good practice to stack it with layers of straw, intermixed with layers of clover. By this practice the clover may be carried a day or two sooner, more of the juices are retained, and the hay generally remains in a more tender and assimilable state, while the interstratified straw has imbibed to a certain extent the flavor and odor of the clover, and is ready for being cut up into chaff with it for the cattle. When straw is thus used no other precautions are needed in regard to the ventilation of the stack; in ordinary cases, where the quantity stacked is large, a chimney in the centre is frequently resorted to, for the purpose of checking any excessive heating.

We wish, especially, to call the attention of the reader to a single expression in the above extract, viz:—"In stacking, (or storing in the barn, as we do,) it is desirable that the crop should *contain sufficient natural moisture* IN ITS TISSUES to induce a gentle heat and fermentation in the mass, by which the quality of the hay is greatly improved." This is a point of the utmost importance in securing hay, and yet it is one very generally overlooked by our farmers. In hot and dry seasons, most of the hay is exposed until there is scarcely a particle of moisture left in its tissues—the natural juices of the plant are literally baked out by a scorching sun and drying winds. The hay breaks like dry twigs, is harsh and wiry, and has lost a valuable portion of its most nutritive properties. The whole subject of making and securing hay demands more care and consideration than it has yet received.

## BLACK TEETH IN SWINE.

Last year this disease was somewhat prevalent and destructive in New England, and those having swine should be on their guard now that the season for hot weather has again come. Confinement from the ground is believed to be one of the causes of this troublesome disease. Its commencement is indicated by loss of appetite, tumours and weakness in the hind legs, and frequently in the loins, with staggering and vertigo. As soon as these symptoms appear, administer a dose of brimstone or flour of sulphur. Frequent applications of buttermilk to the back and loins, and gentle rubbing with a cob, will generally bring relief, and frequently entire cure. The animals should also be allowed a liberal supply of loam, rotten wood and fresh, cool dirt. If there is a yard attached to the piggery, the animals may be permitted to run out if the weather is clear and pleasant.

No hog should be kept entirely away from the ground, and none without access at all times, to a dry bed, entirely away from the wind and sun. Another great oversight in keeping swine is in not *giving them all the pure, fresh water they will drink*, and especially in hot weather. Once each day, at least, a bucket of cool water should be turned into a clean trough, where the hog can drink what he pleases. The opinion seems quite common that swine do not need much drink. Perhaps they do not require as much as some other animals, but unless they get it in their swill, they should have access to water every day.

THE QUANTITY OF BUTTER INCREASED BY WATER.—A New York dairyman furnishes the following advice for the *Genesee Farmer:*

There has a great deal been said about butter-making, but I thought, as I had had a little experience, I might offer a few hints that may be of use to some of your many readers. When cows are feeding on dry feed, the milk is thicker or richer than when feeding on juicy grasses; then add warm water, when setting the milk, in quantities sufficient to make it as the milk from ordinary cows in May or June. The milk from some cows in the spring and summer months is very thick or rich; then add cold water, if the weather be hot. I have practiced the above, and it has increased the quantity from one to three pounds per cow, each week.

CRACKS IN COWS' TEATS.—These are easily cured, by rubbing molasses on the teats for a few days after milking.

### THE PUMPKIN.

This vegetable, although long known to the New England cultivator, is regarded with different degrees of favor; some considering it as nearly worthless for feeding purposes, while others use it as a substitute for corn and other provender in fattening cattle and swine. In looking over one of our Western agricultural papers some time since we noticed an article recommending the drying and grinding of pumpkins. The meal is then used as Indian meal, and is said to be one of the best articles for fattening stock that is known.

One of the principal objections urged against the pumpkin is that it contains too little nutriment in proportion to its bulk. It is not easy to set this objection aside; but by drying it the nutritive matter alone is preserved, and the entire mass reduced to less than one sixty-ninth of the original bulk. For this purpose the best and ripest fruit should be selected, and the operation commenced by removing the seeds. The sphere should then be cut in two, horizontally, and each sphere cut into rings; the thickness of each slice being about half an inch. These slices should be hung on strong poles, firmly suspended, and in such a condition as to admit the rings being slipped on and off as convenience or necessity may require.

Those who are fond of pumpkin pies in the winter, preferring them to squash pies, may find this process a paying one; but we think it cannot be made so for feeding and fattening cattle. We have, however, a high opinion of the value of pumpkins to be fed to milch cows or fattening cattle, in a green state, and also for fattening hogs, when cooked and mixed with potatoes, meal, &c. All these animals are very fond of them, and thrive well when fed judiciously with them. They are easily raised and harvested, and may be kept quite late by packing them in the lean-to or other room in the barn, in straw or hay.

### SALTING HAY.

Our great hay harvest is again near at hand, and it will be well for all who are engaged in it to ascertain what will facilitate cutting and gathering it, or preserving it in good condition after it is secured. For several years past a practice has prevailed to an extent which we believe has been injurious,—that of *salting* it.

Cattle fed principally on dry fodder will eat very little salt, voluntarily, during the time they are fed in the barn. If salt is freely applied to the hay upon which they are fed, they are forced to consume a considerable quantity which they do not need, and which, to say the least, does them no good, if it does not induce actual sickness. Who knows but the disease which has been carrying off sheep by thousands, during the last winter, has been occasioned, in many instances, by over-salted hay! The use of salt for this purpose leads to the bad practice of getting in hay in a half-cured condition. The expression with regard to such hay is,—"this will answer, with a good application of salt." Hundreds of tons are thus got in under this soothing delusion, and the stock is obliged to eat it or starve!

In an article in the *Country Gentleman*, by S. Edwards Todd, on this subject, he says: "Keep the salt off it. It does more hurt than good. There is moisture in salt. And the idea is to keep as much moisture out of the hay as possible. Hay is not like flesh. Salt will preserve flesh from decomposition, but not plants. Indeed, it will only hasten their decay. Salt will not dry hay in the mow. It only produces dampness. Therefore, keep it away from the hay."

It is possible that two quarts of salt to a ton of well-cured hay might give it a pleasant relish, so that the cattle would like it better; we do not know that it would, but to put on half a bushel, or more, as is often done, to a ton of damp hay, is wasteful and injurious, in our opinion. Such hay, certainly, cannot be wholesome as fodder.

Last year, a very large portion of the grass cut was wet before it was taken to the barn, and was injured, in greater or less degree, in every instance. In order to secure this valuable crop in good condition, we must avail ourselves of means, in one way or another, of protecting it from the rains, so that when bright suns return we can get it sufficiently dry, in a short time, to be housed. It is easier and cheaper, in the long run, to secure the crop by such means, though the outlay at first may be a little inconvenient.

*For the New England Farmer.*

### SHEEP HUSBANDRY---No. 4.

At a time when the question of a higher tax upon foreign wool is agitating the minds of both wool growers and manufacturers, perhaps it will not be considered out of place to offer a few remarks upon the question in this connection. We have no desire to meet the question as a partisan, but to treat the matter with that candor which we believe it demands; for we have no doubt but extreme views will be urged by individuals of both parties. Yet it may be well for even extremists to pause and consider whether manufacturers and farmers have interests which are opposed to each other, or have *but one real and common interest*, depending one upon another for each other's prosperity. Whatever tends to advance the interests of one, benefits the other; and whatever militates against one injures the other. If the agricultural part of the nation is in a flourishing condition, the manufacturer's best customers are suffering from want of funds; and though the farmers may be destitute of the very articles for which the manufacturer is vainly seeking a market, yet they can only be purchasers on a system of long

credit, which must be obtained at a price ruinous to the purchaser. It will not require many bargains negotiated upon such a principle before their ruin is complete; and the manufacturers are swallowed up in the same vortex which engulphs the farmers. If, on the other hand, the manufacturing department suffers depression, the farmer's best customers are curtailed of funds, and their produce must lay in their granaries waiting for that market which can only be revived by an increased demand for manufactured goods. That trade and commerce always keep exact step with the progress of agriculture, the best statesmen have long known, and have always labored to advance both, in order to make their nations prosperous and happy.

The farmer complains that the present tariff affords good protection to the manufacturer, and but little to him; but he must remember that a tariff on manufactured goods is a protection to the producer of the raw material as well as to the citizen.

The manufacturer does need protection against the cheap capital of Europe, and the American operative requires protection against the poorer paid, yet better trained operative of other countries. For the foreign operative is trained from almost infancy for that department in which, as a general thing, he has to labor through life. The American operative works in one department till he is about able to operate a machine, then he either has to move to another department or quits the business forever. Under these circumstances, the American manufacturer is always struggling with badly trained operatives. The farmer, too, complains of want of skill on the part of his farm help, yet it is not so serious upon the farm where one skilful farmer can direct the operations of the unskilled upon a large farm. And if the American farmer has to pay a much higher price for his labor than the foreign farmer, he must remember he obtains his land at a much less cost, and that wool raising requires but a small per centage of labor.

When the American manufacturer asks for a protective tariff to enable him to employ the foreign laborer,—he only asks for protection to enable him to furnish a market upon his own soil for the products of that soil; thus finding a market for the farmer at home in place of leaving him to seek it in a foreign land. If all the manufactured goods which are consumed in America were manufactured here, we have little doubt but the whole of the produce of the soil would be consumed by the artisans employed in the different trades, thus saving an enormous cost of transporting food to feed the operatives in a foreign land, and bringing the product of their skill here. The present tariff on wool would be much better for the farmer if it did not favor the importation of the dirtiest, poorest and greasiest wool produced in the world—produced on the cheapest lands and with the least cost of labor. The tariff we would ask or the farmer would be one that would protect him against this dirty trash, and bring him into competition only with the wool raised on the best lands, and with the best paid labor. A moderate specific duty would speedily affect this.

We earnestly entreat all to avoid extremes. If the farmer should obtain a large tariff, the manufacturer must have the same, or the foreign manufacturer would soon drive him out of his own market; and then the farmer must seek a market for his wool in a foreign market, where he would have no protection but cost of transportation, and perhaps a tariff operating adversely. Should the manufacturer receive protection sufficient to enable him to pay an exorbitant price to the farmer for his wool, he must have an equally exorbitant price for his goods, which, when the people compared with the prices in other countries, they would speedily abolish all tariffs as monopolies too grievous to be borne. Thus we should have, as we have frequently had before, a principle carried to such an extreme as to produce a reaction that would destroy itself; and in this case, as it has done before, it would fall heaviest on the farmer.

For example: The tariff of 1846 proved very disastrous to sheep husbandry, not only in this State but in the United States. On referring to the first article on this subject, it will be seen that the great fall off in wool and sheep in this State was between 1840 and 1850; and though there has been an increase in the United States, yet that has not been near equal to the increase of population or to the increased demand. In 1846, a large number of factories, and the largest woollen factories in the country, were employed in producing broadcloth which was equal in every respect to the best productions of England and Germany. A large amount of fine merino wool, equal in many respects to that produced in Saxony, France, or Spain, was raised in this and other States, and found a ready market at remunerative prices; but when that tariff came into operation, our manufacturers could not compete with the cheap labor and cheaper capital of the old world. The manufacture of broadcloth was abandoned, and in 1860 there was not a single loom in the United States weaving that kind of goods. The machinery was employed in manufacturing medium and coarse fancy cassimeres, which required a coarser and longer stapled wool than fine broadcloth. But the farmer could not change his sheep so quickly—they were fine wooled, and with the loss of the broadcloth trade, the value of fine wool suffered depreciation; the sheep were valuable for wool only, their carcasses being small, their lambs small, and the sheep tender, rendered them scarcely remunerative, the breeds were suffered to run out, and this completed the overthrow of the production of fine wool in this State and seriously affected it in every State.

In 1845 the number of fine wooled sheep in this State were about 200,000; in 1855 their numbers were reduced to 72,390.

In 1842 a few enterprising firms commenced the manufacture of worsted goods, and were bidding fair to establish that business upon a permanent basis. This called for another and entirely different class of wool,—a kind which has been brought to great perfection in England, the raising of which has given that country the universal control of the manufacture of coarse and medium worsteds, and enabled her successfully to compete with France in the production of the finer varieties, although she has to import her wool for that purpose. When the worsted business commenced in this country, there was a demand for long worsted wool, and some of our most enterprising farmers imported some of the long wooled breeds of sheep, with the intention of supplying the de-

mand for that class of wool; but the tariff of 1846 closed up that business, and coarse wooled sheep shared the same fate as the fine wooled ones—and 1859 found us with scarcely a decent flock of sheep in the State. Yet the manufacture of mousseline delaine continued; but for a number of years the filling was a fine woollen thread, and not worsted, and required a medium wool with a medium length of staple. But on the invention of machinery in England for combing wool, which before had been performed by manual labor, and at a great cost, these machines were introduced into this country, and the United States have now the control of their own market for mousseline delaines; and remember this is but the alphabet of the worsted manufactures. A wide field is yet open. We are paying Great Britain an enormous sum of money every year for this class of goods, to say nothing about alpacas, fine worsteds and fine woollens, the raw material for which she has to import. Her capital is cheap, and we are every year doing all in our power to make it cheaper by increasing it. In no way can the interests of the farmer be so permanently benefited as by doing our own manufacturing. The artisans of Europe we can obtain at any time. We have always had their sympathy; and now that circumstances are doing what a sound policy has always recommended—developing our own resources—we may expect their aid. The farmer need have no fears that the policy of 1846 will again prevail, and blast his hopes just when they are ripening into fruition. A heavy national debt will require a large tariff, and a revenue tariff sufficient to meet the requirements of such a debt will afford sufficient protection to infant enterprises; and the people now realize more than ever the necessity of keeping their money at home, lest it should be used in affording material aid to the enemies of a true republic.

TYRO.

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*For the New England Farmer.*

## A WORD FOR THE BOYS.

Old Times and New Customs—the Dead Bird—A Timely Sermon—Orchard Plowing—Saving Life—Sparrows' Nests—Birds are our Friends—Caterpillars—Result of Honest Industry.

I very much regret it was not the custom when I was a boy, as it now is, for boys, and girls, too, to have a little pocket diary in which to note important facts or transactions as they occur. I have forgotten a thousand things that would have been useful to me had I noted them at the time. I well remember, that, nearly forty years ago, when I was quite young, the robins never failed to come and build their nests and hatch their young among the branches of two noble elms that stood near my father's house. We were never allowed to molest them; indeed we had no disposition to do so, for they seemed almost as belonging to the family,—but one day there came along a cruel man with his gun (they said he was in drink) and shot one of the old robins, while quietly sitting upon its nest. The poor bird remained in the same position, with its bleeding head hanging over the nest, dead. As you may well conceive, I needed no diary to imprint the sad spectacle on my memory. My father, who was extremely fond of birds, felt very indignant at the wicked act. He procured some little poles, and by splicing them together, succeeded in removing the dead bird. He was an excellent minister of the gospel, and improved every opportunity to fasten good moral lessons on the minds of old and young, and he preached to his boys a short but instructive sermon on the sad and cruel death of that poor robin.

I have now lived to have boys of my own, trees of my own, and a great variety of birds that come annually to build their nests among the branches of those trees and upon the ground beneath them. I have been ploughing to-day and for several days past in my orchard, with one yoke of oxen and one of my boys for a driver. It is tiresome work to plough an orchard well, without injuring the roots and limbs of the trees, and requires much patience, both in the holder and driver; but as the fruit yields more cash income than all the rest of farm produce sold, I feel inclined to cultivate it every year, notwithstanding many disapprove the practice. I am almost too tired, after ploughing all day, to write at all, but I wanted to relate two little incidents that occurred, trifling in themselves, but in striking contrast with the one already mentioned.

One of them was, that John, as he was driving, stopped two or three times while the oxen were moving along, and with his goad stick drove away a toad that barely escaped being crushed beneath the oxen's hoofs, remarking as he came up, "*I saved that toad's life.*" The other was his taking with him a spade, and removing several ground sparrow's nests, as we approached them with the plough. I noticed that he took them up very carefully, with the little tuft of grass by which they were made, and moved them but a short distance at a time, so that, the furrow being long, the bird always returned while we were passing round. In this way, by degrees, he carefully secured them in a safe place, where they could hatch their young unmolested. This was done without any suggestion of mine, and the first intimation he has of my approval will be from reading this article,—for our boys never fail to read the *Farmer*.

Now it may seem a very small matter to some, to trouble one's self about a toad or a sparrow's nest, even, but I think quite otherwise. One of the old poet's remarked, (Young, I believe,) [Cowper. Editor,] that he

> "Would not rank upon his list of friends
> The man who needlessly sets foot upon a worm."

Birds not only add much to the charms of life, but they are very useful, also, in destroying multitudes of troublesome insects and worms; and in this latter respect, the toad, perhaps, is quite their equal. But the birds and toads cannot destroy all the worms and caterpillars and insects that infest our orchards. The men and the boys must do their part. I take it for granted that good, neat farmers, have already heeded the suggestions of the editor and others, and removed the unsightly caterpillars, while small and easily done; but if any still remain, just ask your fathers, from me, to give you a trifle for every nest you will remove—not as pay, for all they have will be the children's by-and-by—but as a present for performing an unpleasant but necessary task, and my word for it, they will soon disappear.

Now, boys, one word of advice. Never discharge a gun, or throw a stone, even, at one of those lovely birds that come regularly to spend

their summer months with you, even if they do take some of your currants and cherries. Say, as a sensible old neighbor of mine who lives close by a river surrounded by a great variety of beautiful trees, and who has several fine cherry trees close by his windows, once said to me, "That he was willing the birds should have half of them." One reason, he said, why he admired trees so much was, because he could have the birds with them. No wonder that he enjoys a cheerful old age. He is about fourscore—has worked hard all his days, accumulated a large property, and is quite active still. Only last night, as I went to his mill with a grist, after dusk, he was sitting by the river, catching fish, with his grandson by his side to pick them up.

Remember, boys, that your Heavenly Father is mindful of the sparrows, and provides for them their food; but he is still more mindful of you, and says "You are of more value than many sparrows."

J. F. FRENCH.

*Northampton, May*, 1864.

*For the New England Farmer.*

## NOTES FROM THE PROVINCES.

Your correspondent turns up here, intending to take a tramp through this province on foot, with carpet-bag in hand. One is surprised at first setting foot on shore, to find such excellent land; but it wants farmers. The tillage land is plowed about five inches in depth, laid up in beds of about twelve feet, whether moist or not. The first that attracts my attention, that is unusual in the States, is the oat mill, with its large heap of hulls thrown away. Oat meal, by the way, is a great article of food, with all classes, and enters into general use more than wheat, which is not much cultivated. A little farther on, I came to a freestone quarry, which is removed with less care than the limestone is with you, but of late not much is done in it. The inhabitants are mostly descendants of the Scotch and Irish, but, rarely, one meets with the Acadian, whose tendency is to their primitive manner of life, with dress of the Normandic style. You will find, roving, the Nova Scotia red man, a degenerate race, who, in many cases, intermarry with the negro. Along the roadside are coal mines, opened for family use.

After leaving Pictou, is a tract of wood, which has been burned over within 10 years, and extends nearly to Truro. At Truro, the terminus of the Halifax Railroad, is a good farming country, which seems to be well improved with large barns, to hold the grain crops. From Windsor to Horton, a distance of twelve miles, there are many traces of the original French settlers. As in Canada, this is shown by the long line of poplars; so in Nova Scotia, they are to be traced by the abundance of orchards. From Windsor, all around the shore to Annapolis, we find these orchards, at different points, and the high reputation for fruit which Nova Scotia, has obtained, is to be attributed chiefly to the original French settlers. I must add that I never have seen apples at this time of the year which retained their flavor like these, and if I were raising fruit I would be at the expense of procuring scions to propagate from. These apples would bring, in Boston market, two dollars per barrel more than russets.

The new idea of using fresh cow manure was shown up to be one of the best dressings for cabbages, &c., more than one year since, by myself, and I was induced to use it by one who made no pretension to farming, but whom I noticed raised fine cabbages when others failed. Before I finish this letter, I will say that if one wishes to live cheap, and pay low taxes and low duties, to support government, let him try the Provinces. Beefsteak, 8 cts. per lb., veal, 6 cts., sugar, 9 cts., tea, 50 cts. Cloth for which we pay $2.25, there, is $1. A farm which would be taxed $10 here, would be $40 in the United States; a pair of boots, with you, worth $5; here, $3.

S. P. MAYBERRY.

*Halifax, Nova Scotia, May* 1, 1864.

## GAME AND BRAHMA FOWLS COMPARED.

SIR:—I am quite delighted with your paper, more especially as I am a lover of poultry. Every one has his own fancy for fowls, and I see in your issue of March 1st that "Game Cock" thinks there is no variety like game fowls. I wish to compare my Brahmas with the games. "Game Cock" keeps 23 hens and 2 cocks, at a cost of 20 cents per week; I keep 12 hens and 1 cock, which cost me 20 cents per week; and which, I think, is very little. I feed upon corn, buckwheat, and sometimes barley; I prefer corn. My hens get a regular allowance 3 times a day, with plenty of good clean water, and their house is cleaned and swept every morning. Our notes compare as follows:

GAME (23 hens.)—January, 26; February, 14; March, 237; April, 255; May, 237; June, 191; July, 272; August, 267; September, 208; October, 210; November, 84; December, 28; total, 2,029—169 dozen, or 88 eggs to each hen.

BRAHMA (12 hens.)—January, 86; February, 159; March, 226; April, 201; May, 204; June, 136; July, 124; August, 102; September, 97; October, 70; November, 23; December, 51; total, 1,482—123 dozen, or 123 to each hen.

Now, Mr. Editor, you will see that I got 123 eggs from every hen, while "Game Cock" got 88. I also raised 70 chickens; of course, it cost a little more when feeding so many chickens. I reckon the cost of keeping fowls at a little less than one penny per week each fowl.

JOHN VEITCH, *in Canada Farmer.*

*Brockville, April* 2, 1864.

PEA CHEESE.—There is a very close resemblance between several animal and vegetable substances. Thus animal milk contains a large quantity of caseine, which is the principal substance in cheese; and peas also contain a large amount of the same substance. The Chinese who have exhibited such an aptitude for domestic economics, that they even make soup of bird's nests, have also found out that cheese can be made of peas. For this purpose peas are boiled into a thin paste, then passed through a seive, and an acid added to the pea solution, which becomes curdled like sweet milk by the action of the common rennet upon the latter. The solid part is then salted, pressed into cheese molds, and it gradually acquires the taste and smell of cheese. It is sold in the streets of Canton under the name of "Taofoo," and when fresh it is a favorite article of Chinese food.

WHENEVER we utter a true word, instantly we feel 'tis God's, not ours.

## THE BLITHE LARK.

BY FREDERICK TENNYSON.

How the blithe lark runs up the golden stair
That leads through cloudy gates from heaven to earth,
And all alone in the empyreal air,
Fills it with jubilant sweet sounds of mirth!
How far he seems, how far,
With the light upon his wings—
Is it a bird or star
That shines and sings?

What matter if the days be dark and frore,
This sunbeam tells of other days to be,
And singing in the light that floods him o'er,
In joy he overtakes futurity;
Under cloud-arches vast
He peeps, and sees behind
Great summer coming fast
Adown the wind!

And now he dives into a rainbow's rivers,
In streams of gold and purple he is drowned,
Shrilly the arrows of his song he shivers,
As though the stormy drops were turned to sound;
And now he issues through
He scales a cloudy tower,
Faintly, like fallen dew
His fast notes shower.

Let every wind be hushed, that I may hear
The wondrous things he tells the world below;
Things that we dream of he is watching near;
Hopes that we never dreamed he would bestow.
Alas! the storm hath rolled
Back the gold gates again,
Or surely he hath told
All heaven to men!

So the victorious poet sings alone,
And fills with light his solitary home,
And through that glory sees new worlds foreshown,
And hears high songs and triumphs yet to come;
He woos the air of time
With thrills of golden cords,
And makes the world to climb
On linked words.

What if his hairs be gray, his eyes be dim,
If wealth forsakes him, and if friends be cold?
Wonder unbars the thousand gates to him;
Truth never fails, nor beauty waxeth old;
More than he tells, his eyes
Behold, his spirit hears—
Of grief and joy, and sighs
'Twixt joy and tears.

Blest is the man who with the sound of song
Can charm away the heartache, and forget
The frost of penury and the sting of wrong,
And drown the fatal whisper of regret!
Darker are the abodes
Of kings, though his be poor,
While fancies, like the gods
Pass through his door.

Singing, thou scalest heaven upon thy wings,
Then liftest a glad heart into the skies;
He maketh his own sunrise while he sings,
And turns the dusky earth to paradise.
I see thee sail along,
Far up the sunny streams;
Unseen, I hear his song,
I see his dreams.

## WORKING BULLS IN SINGLE HARNESS.

*The Ontario Times* gives some experiences in this matter, and a correspondent of the *Working Farmer* adds:

My experience corroborates the statements of the author as to the service of these animals when properly trained. I keep three horses, and yet most of my farm work, except plowing and dragging, has for two years past been done by a bull. He is used for all kinds of drafts, on the ground, on drag, in cart, in sleigh, in buggy, covered carriage, etc. He is used to cultivators, and rakes hay without a driver. The harness used is similar to the one in ordinary use for a horse, except that the collar and hames are inverted. He is more hardy than a horse, is guided with perfect ease and precision without reins, walks or trots, and is as kind and docile as a pet kitten. I think he will move as large a load as an ordinary horse.

He belongs to my son, a lad of fifteen, who has broken and trained him. He will soon be five years old, is a fine animal, a cross of the Devon and Durham blood. He has a mate, a stag, so that when needed he can be used for plowing and dragging. My son is now training another, which will be two in a few months. He can be used already for almost any work, by being led. Learning to drive without leading requires some time and patience.

## ROOT CROPS—THE TURNIP.

We have often urged upon the reader the convenience and economy of raising roots as a portion of the winter food for farm stock; cattle, horses, sheep, swine and poultry. We believe the time will come when they will be considered indispensable to a profitable wintering of stock, and when the farmer—through their help—will be enabled to keep a fourth part more than he formerly had, on the same number of acres. This state of things has been accomplished in England, and a large portion of its arable land made permanently rich and productive mainly through the process of raising and feeding out roots to stock.

If anything is to be done in this direction, the season is now at hand to attend to it. The principal roots used for this purpose are the mangold wurtzel and the swedes and flat turnip; the beet, in several varieties, and the carrot are also employed with success. Nothing is more easily produced than the common flat turnip. It may be sown by itself or with the corn or potato crop, and large quantities grown with the most trifling care and cost, and it is thought not to materially exhaust the soil upon which it grows. Its broad leaves are supposed to find a large portion of its nourishment in the atmosphere.

The shape, form, color and modes of growth exhibited by the members of this constantly increasing family are almost infinite. Some are white, some yellowish, some green and some tinged with a delicate pink or purple;—some grow with almost their entire bulk exposed above the surface of the soil,—others entirely below it. In England it is said not to be uncommon to see turnips weighing sixty or seventy pounds, although with us ten or fourteen pounds is contemplated with astonishment and chronicled as a wonderful development. It is true that, although evidently not adapted for transplanting—being of a watery and consequently of a fragile nature—the English turnip may be

transplanted if care be taken to remove with it a sufficient quantity of soil; but this necessity—for such it is, opposes a serious obstacle to the adoption of the practice, as a general rule, and the farmer acquainted with the habitudes of the plant, and studious of his own interests, prefers sowing them where they are to stand.

The ruta baga, and the various other individuals of the turnip family, are too well known to require any description here. They are all hardy, grow vigorously and rapidly in suitable soil, and are highly prized as food for almost every description of animal ordinarily kept upon the farm. They require a generous, but not over rich soil, and the best stimulants for them are bone manure, ground oyster shells, ashes, gypsum, and perhaps guano.

We have referred above to the high value which English farmers place upon root crops. Brown, in his "Treatise on Rural Affairs," says "that the introduction of the improved turnip culture into the husbandry of Great Britain occasioned one of those revolutions in the rural art which are so constantly occurring among husbandmen. Before the introduction of this root it was not possible to cultivate light soils successfully, or to derive suitable rotations for cropping them with advantage. It was, likewise, a difficult task to support live stock through the winter and spring months; and as for feeding and preparing cattle and sheep for market during these inclement seasons, the practice was hardly thought of, and still more rarely attempted, unless where a full stock of hay was provided, which only happened in a few instances. The benefits derived from it are of very great magnitude. Light soils, before useless, are now cultivated with facility and profit; the earth is turned to the uses for which it is physically calculated; and, by being suitably cleared with this preparatory crop, a bed is provided for grass and other seeds, wherein they flourish and prosper with greater vigor than after any other preparation."

The reader will, perhaps, observe, in the above extract, that the English custom of wintering cattle was widely different from ours. Brown says that a "full stock of hay was provided only in a very few instances." Our practice among good farmers is, to crowd large barns with good, sweet hay, to overflowing, and give every animal as much as he will eat with a good appetite, and occasionally stimulate that appetite with a mess of some kind of roots. Each country, it seems to us, practices upon extremes—one depending mainly upon roots and the other upon hay. What is most economical and best, is, undoubtedly, a combination of both systems—a happy mingling of both modes of feeding, so as to temper the dry fodder with the tender and juicy roots, and the roots with the sweet and nutritious hay. This is the point to which we desire to call the attention of our farmers, and especially of those who are constantly fattening cattle and sheep for the market. Their chief reliance has probably been corn meal. This is now very high and will remain so for some time. We believe its place may be supplied in a considerable measure by a plentiful supply of a variety of roots fed alternately with as much sweet herds-grass, clover and red-top as the animals will eat. We do not know how it would result in a number of cases, but the best beef we ever ate was fatted in this way,—a plentiful supply of roots and as much English hay as the animal would eat, fed at regular times. The beef was tender, juicy and finely mingled, or marbled, as the butchers term it. We hope that more attention will be given to the culture of roots, and that more thorough experiments will be made of their use in fattening animals.

## EXTRACTS AND REPLIES.

### Habits of the Wild Goose.

Thinking that your readers would be interested in a brief description of the wild goose and its peculiar habits, I will give a few of them. This splendid bird is no Mormon, or at least does not believe in a plurality of wives, for the gander will never have but one mate at a time, and never forsakes his first love unless separated by some cause which he cannot prevent; nor will he allow his mate to take grain from the same dish with him until he has finished his meal and then he will allow her to eat hers. Although they are natives of America they are not "know nothings," for if there is not one of their own nation that they can get they will mate with one of foreign birth and other colors, rather than remain single. Their noise is quite musical, and especially so just before a storm. Though wild in their nature, they are easily domesticated and quite fond of being caressed. The female goose lays about ten eggs, is a good sitter and very careful of her young. Her mate does constant sentinel duty, and fears nothing while protecting its young. Though not as large as the African and other foreign birds, they are a great ornament to the poultry yard, besides producing a good yield of feathers once in six weeks.

*Elgin Spring*, 1864. W. S. ALLEN.

### Rose Bugs.

As it is most time for the rose bugs to make their appearance I would like to inquire if there is any way to prevent their destroying our grape blossoms, apples, &c. Last year they injured my grape vines, so that the crop was an entire failure; they eat the blossoms entirely up, and my apple trees were covered with them; about every apple and pear was eaten more or less, so that I hardly had any fruit but what was injured by them. If you can prescribe a remedy for this pest, you will do a great favor to many in our neighborhood, and I trust others. E. LEONARD.

*New Bedford, June*, 1864.

### A New Insect.

Our apple trees are covered with little green lice. I never saw any until last year, and on inquiry I find but few noticed them at all. I have seen one man (an early riser,) who remembers they covered the trees "when he was a small boy." They come out very early in the spring, or as soon as the leaves begin to appear; they sap the leaves as the midge (weevil) does wheat, making them look yellow and withered. As soon as the buds begin to open they enter them, fasten thickly on the growing fruit stems and blast them. If any escape they do not become large and

fair, as they used to do. Wherever my observation extends in Vermont there are plenty of them. Apple trees blossomed very thickly in this vicinity this year, but there will be but few apples, I am satisfied.

Can some of your wise entomologists tell us if this is their perfect state, when they are deposited on the trees, when they disappear, and if we can *get rid of them?* If not, my advice is, do not plant apple trees in Vermont; it is time and money wasted.

*Washington, Vt., June,* 1864. J. J. WATSON.

REMARKS.—It is humiliating to attempt to answer inquiries like either of the foregoing. Dominion over "every living thing that moveth upon the earth," was in the beginning promised to man. But though he may have sought out many inventions it is evident that his "mission" is not yet fulfilled. In passing through Cambridge the other day, we noticed that the canker worm had commenced its annual ravages on the fruit and ornamental trees of that beautiful section; sparing neither those which surround the princely mansions of the faculty of Old Harvard, or those which shade the very door-steps of her naturalists—her Agassiz and her late Harris. The insect described by Mr. Watson is probably one of the numerous family of *Aphididæ*, or plant-lice. One of our contemporaries in reply to similar inquiries by a correspondent, gravely suggests the application of a wash. But just think of washing the buds of not only a single large apple tree, but all the buds of all the trees of a large orchard! And yet this is about the sum of our knowledge of the means for the destruction of insects injurious to vegetation. The thumb and fingers of children in connection with a dish of hot water, constitute the most effectual machine for the destruction of rose bugs that we know of. Offer a small price per thousand for their heads, and if that fails then appeal to the "wise entomologists" for further directions.

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FANCY FARMING.—Mr. C. W. Carpenter, Mt. Gilead, Ohio, writes to the New York City Farmers' Club, a dissertation on Fruit-growing, which is published in the New York *Tribune*. His article closes with the advice that every farmer give his wife "a quarter, a half, or even one acre to plant to grapes, blackberries, raspberries or strawberries." He says, "If a woman takes good care of her fruit garden, besides supplying her family with health-giving luxuries, she can have a hundred dollars worth, or more, of fruit to sell every year." "Such exercise," he adds, addressing the women, "will give increased vigor of body and the light, elastic step; then you can fly around and do your housework in a jiffy." We would not presume to limit the endurance of the Buckeye ladies, but in New England we apprehend that few farmers' wives will be likely to add the care of an acre of strawberries to their other duties, however acceptable the one hundred dollars might be to them.

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BIRDS AND INSECTS.—In a recent club debate about insects, Mr. Prince, one of the oldest and most extensive nursery men in the vicinity of New York city, said that on his grounds they preserve all the birds and are not troubled with insects.

*For the New England Farmer.*

## SHEEP HUSBANDRY.—No. 5.

It has been frequently asserted that no country adapted to sheep husbandry ever entered upon that branch of agriculture without becoming wealthy. Probably in no country, in proportion to the extent of territory, has the breeding and keeping of sheep been so extensively carried on as in England, and no country in the world can boast of more wealth. That this is the result of sheep husbandry alone, we do not believe; but we do believe that it is one of its principal sources of wealth, and we maintain that no farmer ever introduced sheep upon his farm, but his land was improved thereby, and if his sheep were properly cared for, his finances were also improved. And no farmer ever abandoned sheep husbandry, but his farm suffered in consequence, and his income proportionately diminished. In England, he is considered a poor farmer, and not up to the spirit of the times, who keeps no sheep.

It is a well established fact that on any pasture, stocked to its utmost capacity with cows, as many sheep may be added, and a horse introduced occasionally, and the pasture not impoverished, but improved. Sheep will feed upon the herbage which cows reject. It is an old adage and a true one, that horses alone impoverish a pasture, cattle alone improve, but sheep alone enrich it. Where horses, cattle and sheep are allowed to feed in the same pasture, we always find the grass evenly cropped, no unsightly tufts of grass with their rank, coarse growth, left to rot upon the ground, but all is economical.

In England, he who should talk of running out a pasture would only submit himself to ridicule. There, it is always presumed that a pasture will be improved, and it is no rare occurrence to take one, two, and sometimes three crops of grain from a newly broken-up pasture before applying manure; and commonly when a field has been hard run in tillage for a number of years, so that its fertility has been impaired, it is seeded down, and converted into pasture in order to improve it. This the farmer calls laying it down to rest. The landlord never objects to his land being laid down to pasture; but the tenant is never allowed to plow up that which was down when he hired his farm, only under an expressed agreement. It would be well, perhaps, to state in this connection, that in England, dairy cows are never stabled during the night. In many cases they are milked in the pasture, and when driven up for that purpose they are returned as soon as they have been milked. The English farmer does not confine the fertilizing powers of the sheep to his pasture, but he makes them fertilize his arable lands. In the vicinity of the Downs, it is a common practice to fold the sheep at night upon their arable lands, which feed upon the hills by day, and this is about all the manure they apply.

Mr. Hiram Barbus, in the Agricultural Report of 1860, quotes the following from Mr. Stephens, that a dressing thus given by three hundred sheep is sufficient in one week for an acre of land, and is worth fifteen dollars or five cents per head per week. Mr. Barbus asked the question: "May not the universal deterioration of the lands in our rural towns be attributed to the fact that the keeping of sheep has been abandoned for that of cattle?" He says "it is laid down as a fact among

English farmers that the wealth and success of a farmer may be pretty well calculated by the amount of his sheep stock." He asks another question, and gives the answer: "What shall we do to improve our worn out pastures? When sheep were universally kept, this question was never asked, because sheep are ever improving the ground on which they feed." It is said, that man is a universal benefactor who makes two spears of grass grow where only one grew before. What must we say of sheep that make four spears of grass grow where only one grew before, and two blades of grain, where before but one was raised, which clothes us with its fleece, and feeds us with its carcass!

The manure of sheep, if not equal to guano and the droppings of fowls, ranks next as a fertilizer, and if not rich in ammonia, it is richer in phosphates.

Thirty-six pounds of sheep manure are considered equal to one hundred pounds common barnyard manure. We well remember the time before the introduction of guano, when we collected the droppings of sheep, and put them in a barrel with a quantity of water, and after giving them a good pounding, as some do clothes, till they were thoroughly macerated, the liquid was used to force vegetables, shrubs and plants, and sometimes fruit trees, with results about equal to guano of the present day.

But sheep have another element of fertilization which I have not seen referred to in any report or essay on the subject. There is always exuding from the pores of the sheep an oily substance called yolk; this contains a large amount of potash and other alkaline matter. The amount thrown off in the course of a year is large, and is one of the best fertilizers known. This is to some extent washed off in heavy rains, hence the adage, that the sheep fertilizes the ground it lies upon.

The committee on sheep husbandry, as published in their report in the Agricultural Report of 1860, say: "That to the question proposed in our circular, whether sheep improved pasture land, there has been from every return but one unequivocal yes, especially on those pastures where the coarse grasses, briars and bushes are coming in.

J. E. Wight, Esq., in answer to the often asked question, Are sheep as beneficial to the soil as cattle? says: "This question, I think, will meet, with those who have had the experience of the culture of both cattle and sheep, with a ready answer, that the fertility of the soil can be better kept up with sheep than any other stock."

Mr. Joseph Reynolds says: "A gentleman writing from Plymouth county, in 1859, remarks: 'Some of the finest examples are afforded here of the effects of feeding sheep upon pastures that have become exhausted of nutritious grasses, and grown to bushes, briars, brakes and moss. I have seen pastures to-day that had become almost worthless, but now green and smiling as a lawn, with every inch among the rocks covered with the richest pasture grasses, and not a single blackberry vine, wild rose bush, mullen or other useless plant in sight. The sward does not seem bound and compact, but loose and porous, and filled with the most healthy and vigorous roots.'"

While Mr. Reynolds himself says: "Experience shows that sheep walks, instead of becoming exhausted, uniformly grow better and more productive, and then one of the most effectual means of destroying the bushes and mosses, and bringing back the sweet grasses to an exhausted pasture, is to turn upon it a flock of sheep."

While R. S. Fay, Esq., then Secretary of the Massachusetts Society for the Promotion of Agriculture, and who has owned a large flock of Oxfordshire Downs, for the last ten years, in a very able essay, says:

"We have constantly had under our eye a hundred acre lot upon which cattle a few years ago could not live, that maintains in good condition a large flock of sheep; and the improvement of the pasture has been so great that a dozen head of cattle beside the sheep do well upon it.

"The reasons for this are obvious to any one who has observed the habits of sheep; they are more indiscriminate feeders than cattle; they nip the shoots of almost every shrub, as well as weed, extirpating many kinds in the course of two or three years; they make room in this way for the grasses to come in where they have been shadowed out or otherwise displaced; the white weed, the broom, or wood wax, as it is commonly termed, the golden rod, the blackberry vine, the blueberry, with many other similar plants, disappear before them, and the finer grasses and white clover take their place.

"This, however, is only one of the advantages which sheep possess over cattle upon pastures which are impoverished—they scatter manure in the way to produce the largest benefit, besides it possesses in the highest degree the requisites essential to restoring to the land the phosphates which it loses by long depasturing with cattle.

"The manure of the sheep suffers no waste, being in a highly concentrated form, and at the same time is minutely divided and evenly distributed over the surface of the ground. So good and economical a distributor of manure is the sheep, that experienced farmers in England are feeding them, when in pasture, with oil cake, for the additional benefit of the manure."

The report of the committee on sheep, for Worcester North, published in the report of the Secretary of the State Board of Agriculture for 1863, says they made the following inquiries of the principal sheep raisers of their acquaintance:

1. Is it better for pasture lands to have sheep kept on them, than any other kind of stock?

2. Do you know of your own experience that sheep will eradicate bushes, or in any way improve the pastures in which they are kept?

In answer to these questions, Mr. H. M. Caswell says: "I notice sheep always rest on the highest parts of the pasture, and spend more of their time upon the hills than cattle, consequently the manure is more evenly distributed. Sheep also require such a variety of food they will even kill out hardhacks and thistles."

James McIntire says: "There is no stock like sheep to renew old pastures. I know clover to come in, and bushes to die out in pastures where they have been kept."

Mr. Joel Hayward says: "I am well satisfied that sheep do materially improve pasture lands, not only from my own experience, but from what I have observed of pasture lands in this vicinity. I have had sheep for nearly twenty years in one pasture, and am confident that it will keep one-third more, and keep them equally well as when first

used for that purpose. I remember an instance where a piece of land had become quite thickly covered with a growth of white birch. These were cut close with a scythe, and then sheep were turned upon it, which, perhaps, for want of better feed, kept the young shoots fed down, and cleared the pasture of brush."

Mr. Hayward does not believe in compelling sheep to become bush exterminators, but says: "Give them clover and other sweet grasses; give them as good as you have, and if you have used proper judgment in the selection of your flock you are well insured of a good profit."

George Fox says: "It is cruel and unprofitable to keep sheep so short as to compel them to eat bushes;" but he adds: "There is scarcely a bush or plant which sheep do not love to eat. I have many times seen sheep turn from white clover, they like so well, to bushes and brakes."

If sheep are turned upon wild pastures, the farmer must expect wild, poor wool and poor sheep; but if care is taken not to overstock the pasture, and properly select stock for breeding, the improvement of flock will progress just as the improvement of the pasture does. TYRO.

## WATERING CATTLE AND HORSES.

Although few persons think it worth while to pay much attention to this department of husbandry, yet a little reflection will convince any reasonable person of the value and importance of furnishing cattle with a constant supply of pure water. Pure, cool water is said to be a god-send to a thirsty throat; and as cattle are apt to have thirsty throats, they should be permitted to enjoy a luxury which costs but a trifle, and operates very favorably in promoting their health. All classes of domestic animals have as great an aversion to impure, filthy water, as ourselves; and the former will often turn away with disgust from the filthy stuff called water, which is often found in water troughs on the roadside, and within the precincts of the barn, and in some pastures. The common stagnated pond water, which many poor creatures are compelled to imbibe, is often the exciting cause of disease, especially in the Western States, where decayed vegetable matter abounds. Pure water will never injure an animal. I do not believe the stories which are told about horses becoming foundered in consequence of drinking *pure* water. In a majority of cases Mr. Fastman is blameable; he has, probably, either overdriven or overworked the creature, or else has suffered it, when heated, to cool off without the necessary care and attention which should always be observed when animals are fatigued, or perspiring freely.

Hard usage, wilful neglect and wanton cruelty, are more likely to produce disease than the "universal beverage" so acceptable to the palate of a weary or thirsty horse. How often do we see a "*let*" horse come into the stable all exhausted and *used-up*, scarcely able to advance one limb before another! Examine into the facts, and we shall find that the powers of the subject have, perhaps, been overtaxed. He has been driven too far, or at too rapid a rate, for the present state of his constitution to endure; and, perhaps, he has not had sufficient nourishment to repair the waste incidental to the living mechanism, under the states of rapid and protracted labor. Is not this enough to account for the used-up condition? Is it not more rational to suppose that abuse of the respiratory organs, and those of locomotion, operates far more unfavorably on the horse than water? It is. But Mr. Fastman must, if there be any blame rightly belonging to him, try to shift the same from his shoulders, and therefore he avails himself of a popular error,—"*He drank too much water.*" Yet the individual has no means of ascertaining the precise quantity needed. We might say the same as regards our horses whose labors are very fatiguing; they come from their work, and, as soon as unharnessed, go to the trough and imbibe from one to three buckets, without any bad effect. Some animals need more water than others; the kind of work, the temperature of the atmosphere, and the nature of the food, whether it be wet or dry, all tend to diversify an animal's wants. The domesticated horse requires a bountiful supply of good water; his body is composed of seventy-five per cent. of the same, and he can no more exist without it than he can without food.

A cow or ox is probably the best judge, as regards its own wants, as to the quantity of water needed. It is not the quantity which a rational animal imbibes which does harm, but it is the quality that demands our attention.

Thirsty people drink all the cold water they need; then why deprive a cow or horse of what they actually need? Consider the condition of the inhabitants of populous cities during the summer season. Thirst amounts almost to a disease, and, in view of quenching it, the thirsty are continually imbibing water, rendered cold, hot, sour, sweet or alkaline, just as fancy dictates, or as fashion prevails; cold ices and other fixings are called into requisition, to smother the fire of thirst that rages within; everybody partakes freely, the young and the aged, the exhausted and vigorous, the laborer, exhausted by a hard day's work, and the rich man of no work, each and all are doing their best to see the bottom of the pitcher, and to pitch their bodies into the watery element; yet, after all, how few persons complain of any bad effect from it!

Cattle should never be allowed to drink pond water. They should either have access to a running stream, or a clean water trough.—*Prairie Farmer.*

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CUTTING AND CURING CLOVER.—Clover should be cut immediately after blossoming and before the seed is formed. It should be cured in such a manner as to lose as little of its foliage as possible, and therefore cannot be treated exactly as the natural grasses are. It should not be long exposed to the scorching sun, but after being wilted and partially dried, it should be forked up into cocks and left to cure in this position. The fourth or fifth day, when the weather is fair and warm, open and air it an hour or two, and it will then be fit to cart to the barn.

Clover cured in this way without loss of its foliage, is better for milch cows and for sheep than any other hay. It may also be fed to horses that are not hard worked, or to young stock, but it is most valuable for cows in milk. For other farm stock it is worth from two-thirds to three-fourths as much as the best hay.—*Manual of Agriculture.*

## GRUBS IN THE HEAD OF SHEEP.

The following valuable communication, written by Robert M. Montgomery, President of the Ohio State Wool Growers' Association, is copied, somewhat abridged, from the *Rural New Yorker:*

In April, 1862, my attention was called to a flock of sheep owned by my neighbor, Mr. A. He had about one hundred, of which thirty-five were what are hereafter to be known as "tegs." They were apparently in fine condition until the first of February. But then the tegs began to decline—refused their food, and went languidly about with watery eyes and drooping ears—discharging from the nostrils, and exhibiting general and increasing debility. Early in March they began to die. Those which sickened early died in from three to four weeks. But those which sickened later in the season died in from five to eight days. After some ten or twelve were dead, it was suggested that there might be "grubs," and an examination disclosed large numbers of them lying high up in the head, and many of them in the root of the horns. The only available remedy known to us, being a decoction of tobacco, was, of course, resorted to, and was administered to sick and well ones indiscriminately. There was, some asafœtida in the tobacco juice, but I do not consider this important. All which showed an advanced stage of the disease when the tobacco was first given, died. A part of those which exhibited a milder indisposition recovered slowly, and those which seemed well at that time continued well, and the disease, whatever it was, ceased to prey upon the flock. And here let it be noted, none of Mr. A's sheep sickened or died except the tegs. Let it also be noted that the male portion of them remained entire until they were five or six months old, and consequently had horns nearly or quite as large as if they had been rams. The ewes and wethers (stags) were kept together and treated in every way alike. Two only of those without horns died; while but three or four of the eighteen having horns were left.

Taking counsel of my neighbor's misfortune, I then paid more attention to my own sheep. I found nothing wrong with any of the flocks except the ram tegs, of which I had about sixty. I found but one of them which would have attracted the attention of a casual observer; but three or four others, to an experienced eye, showed evident symptoms of disease. The syringe was immediately in requisition, and tobacco and asafœtida injected up the nostrils of the sick and well alike, on every alternate, or at most on every third day, for perhaps two weeks. The result was that about six of the sixty died. Some eight or ten others sickened, but eventually recovered, and the remaining forty-five continued in good health and condition. It may be remarked here that my neighbor, who neglected to apply any remedy till the disease had made serious inroads, lost about 80 per cent. of his horned tegs, while I, having applied remedies early, lost only 10 per cent.

Presuming that the grubs were the probable cause of the disease, two questions arose. Could liquids be so injected as to reach their location? and what effect would certain liquids have? To obtain an answer to the first question, I examined carefully the structure of the head. But to make "assurance doubly sure," I selected a sheep which was quite sick, and bored a hole one-fourth of an inch in diameter in each of the horns about an inch above the wool, and also two holes in his head, about half way between his horns and eyes. I found that liquids injected into the nostrils came out freely through each and all of these holes.

It then remained to determine the effect on the grubs in different stages of development, varying from the white one of less than a quarter of an inch in length to the full grown brown one of one and a quarter inches. I placed them first in a decoction of tobacco and asafœtida. The small ones died in about two minutes, but the larger ones, although showing signs of discomfort, gave no indication of immediate death.

From the above, and from other observations, I deduce the following conclusions:—That the eggs are usually deposited in the latter part of summer; that it depends very much on circumstances when they are hatched; that a large proportion are thrown out and are never hatched; that it also depends on circumstances whether the grubs are fully developed in a long or short time, usually, however, in the latter part of winter and early spring. But I have seen them very small in the spring, and have also seen them full grown in the fall. I conclude, also, that they are not confined to any one class of sheep, though young sheep, and especially if they have horns, are more subject to them, because the larger opening at the root of the horn affords them a more secure resting place above and beyond the sneezing power of the sheep to dislodge them; that sheep in delicate health are more subject to be affected by them than strong, healthy ones; that sheep may and often do have grubs and still remain in good health, but that in other cases they produce serious and often fatal results.

And now, Mr. Editor, if I may presume to advise your readers, it is as follows: Let the sheep's nose be smeared with pine tar so frequently as to carry the smell all the time during the summer. This seems to be a partial preventive, but not absolute; therefore, as a more certain resort, let it be followed during the fall (say once a month) while the grubs are usually but partially developed, with injections of tobacco juice; because, it will be remembered that in the experiment above, the tobacco proved immediately fatal to all the small ones, while it but slightly disturbed the larger ones. This will ordinarily be sufficient, but may be continued as circumstances indicate. This practice, however, is attended with some little danger to the life of the sheep; because, if the tobacco is too strong or in large quantity, and (to use the common expression) goes the wrong way, it will produce sickness and perhaps death in from one to five minutes. But this is not a common occurrence. Sometimes, after they have fallen and are apparently dying, if they are taken up by the hind legs and shaken severely they will recover. It does them no harm after the first paroxysms are over.

I can give no such directions about preparing the tobacco as will enable an inexperienced hand to get it certainly right at first. I advise, therefore, as follows:—Take half a pound of plug tobacco and steep it in six quarts of water; then with a good syringe inject a small tablespoonful into each nostril, and try it on the least valuable ones first, and then increase in strength or quantity as the sheep are able to bear it.

## HARVESTING GRAIN.

As the season for harvesting the cereal grains is near at hand, it is well to give the subject some consideration as to when and how the work may be best performed. The subject is too important to be passed over indifferently, when the price of grain is more than double what it has ordinarily been for many years past. A rapidly increasing population, and an immense waste by war, has created an unusual demand, and one which will probably not be materially lessened for a considerable time to come. Whatever, therefore, will tend to swell the aggregate amount, and secure it in the best possible condition for the use of both man and beast, is worthy of earnest inquiry and investigation.

The kind of soil and its preparation, and manuring and seeding, have long been matters of experiment and inquiry, but the effect of earlier or later harvesting the crop, upon the *quantity* and *quality* of the product, has received but little thought by a large proportion of our farmers.

Our present inquiry is, *when is the best time to cut wheat, rye and barley* in order to secure the largest weight of grain, and the best quality of flour? This is one of the many questions which have not yet been thoroughly investigated and solved by individuals, or by any public institution of our country. When our agricultural college is established, we may expect that this, and many other questions of a kindred nature, will receive attention and be satisfactorily answered. Were this faithfully done, and the resulting facts spread before the husbandmen of the country, we believe the gain, in five years, would be more than the whole cost of the college, land and all.

There are certain signs of maturity in grain plants, which are, of course, regarded by all, but some are governed by one and some by another, so that little approach is made to any well settled and governing rule. The motive of *convenience* governs too many. As a general thing, farmers should control their work, and not allow the work to control them: that is, the plowing, hoeing, haying, and everything else, should be kept up square with the season, and then they will be able to select and improve the precise time when any work should be done. It would be almost as judicious, for instance, to plant corn in October, expecting a crop, as to prune an apple tree in April or May —and yet thousands of farmers do prune, because they say it is *more convenient* than at any other time. This is the leading reason why we have so many decaying and short-lived orchards.

We have sufficiently tested the matter of cutting grain to be satisfied that the opinions we quote below are correct and entirely reliable, and we commend them to the careful consideration of all who have grain to harvest. The opinions expressed in the following paragraphs are by Mr. Anderson, for some time editor of the *Farmer's Journal*, published at Montreal. He says that:

Grass, while still green, contains a large amount of starch, gum and sugar. The sugar is perceived in the sweetish taste of the juice; the starch and gum, being nearly tasteless, are not so readily perceived. The principal nourishing ingredients in all kinds of food are starch, gum, sugar, and some nitrogenous compound. But the starch, gum and sugar are mainly changed into hard, indigestible woody fibre when grass fully matures. If the ripening process be arrested eight or ten days before its completion, and the plant be dried rapidly, double and treble the amount of starch, gum and sugar will be secured. The same reasoning holds true of all kinds of grain. Every one is familiar with the sweet taste of green corn, wheat in the milk, etc. When the growth is completed, cut these crops and you save a considerable quantity of rich nutriment which would otherwise be changed to the woody fibre of the outer shell. The only point to be looked to is to wait until the accumulation of juices is completed, and then begin the harvesting at once. The only exception to this rule is with crops designed solely for seed; these may well be left to the natural full ripening upon the stalk, especially when the seed is to be kept long.

The proper time for cutting grasses is at the moment the seed is set or immediately after the flowering is over. Clover should be cut as soon as in full bloom.

A large number of experiments on wheat and other grains indicate that the proper time for harvesting is when the kernel is fully formed, but still soft enough to yield to a moderate pressure between the thumb nails.

This reasoning is undoubtedly correct, not only because it is founded on true physiological principles, but also because it is confirmed by the experience of those who have put the matter to practical test.

In his agricultural tour through England, our Mr. COLMAN states that he found by many inquiries that "the best rule for harvesting is not when the stalk below the head has changed color, and circulations have consequently ceased, but when grain, though it has ceased to yield milk upon pressure, is yet soft." The advantages of cutting at this stage are given as follows: "Wheat cut early affords more grain, yields less bran, makes a better flour, wastes less in harvesting, gives better straw, and enables the farmer to do more work leisurely."

This precisely accords with the opinions we have gained in our own operations in harvesting grain. Perhaps few persons have given the subject more careful investigation than Mr. C. W. Johnson. He states, in the *Farmers' Encyclopædia*, that

"Grain, if not reaped until the straw is wholly yellow, will be more than ripe, as the ear, generally, except in the late seasons, ripens before the entire of the straw, and it is observable that the

first reaped usually affords the heaviest and fairest sample. The indications of ripeness in wheat are few and simple. When the straw exhibits a bright golden color, from the bottom of the stem nearly to the ear, or when the ear begins to bend gently, the grain may be cut. But as the whole crop will not be equally ripe at the same time, if, on walking through the field and selecting the greenest heads, the kernels can be separated from the chaff when rubbed through the hands, it is a sure sign that the grain is then out of its milky state, and may be reaped with safety; for although the straw may be green to some distance downwards from the ear, yet if it be quite yellow from the bottom upwards, the grain then wants no further nourishment from the earth, and if properly harvested will not shrink. These tokens will be found to sufficiently indicate the ripeness of wheat, barley and oats; but that of rye arises from the straw losing some of its golden hue, and becoming paler."

Some of the most valuable experiments which have been reported on this subject, are those of Mr. Hannam, in the 12th and 13th volumes of the *Quarterly Journal of Agriculture*. The trials were made under his own direction, and with great care. He cut samples of wheat at five different times, as follows:

| | | | | | |
|---|---|---|---|---|---|
| No. 1 | was cut | a month | before | fully | ripe. |
| " 2 | " | three weeks | " | " | |
| " 3 | " | two weeks | " | " | |
| " 4 | " | two days | " | " | |
| " 5 | " | when fully ripe. | | | |

Of these lots, 100 pounds of grain of each yielded as follows:

| *No.* | *Flour.* | *Seconds.* | *Bran.* |
|---|---|---|---|
| 1 | 75 pounds | 7 pounds | 17 pounds. |
| 2 | 76 " | 7 " | 16 " |
| 3 | 80 " | 5 " | 13 " |
| 4 | 77 " | 7 " | 14 " |
| 5 | 72 " | 11 " | 15 " |

Thus it appears that No. 3, which was cut two weeks before it was fully ripe, was superior to the other lots; giving more per bushel than No. 5, (cut when fully ripe,) by 6½ pounds of flour, and a gain of about fifteen per cent. on the flour of equal measure of grain; 100 pounds of wheat of No. 3 makes 80 pounds of flour, while 100 pounds of No. 5 yields 72—showing an average of eight per cent. in favor of No. 3. In grinding, it was found that No. 5 ground the worst—worse than No. 1. There were in No. 5 a greater quantity of flinty particles which would not pass the bolt, than in any of the other lots. The bran from No. 5 was also much thicker and heavier than that of No. 3.

Mr. Hannam concludes, therefore, that in cutting wheat two weeks before it is fully ripe, there is a gain of fifteen per cent. of flour upon equal measures, a gain of fourteen per cent. in the weight of straw, and a gain of 7s. 6d. sterling in the value of every quarter (560 lbs.) of wheat.

Wilson, in his *Farm Crops*, says the best indication of harvest time is given by the changed color of the straw immediately below the head. When this changes from green to yellow, which it does before the body of the straw changes, the circulation of the plant is arrested, and the head can receive no more nourishment from the roots. We know that it can derive none from the air, and therefore at this period must contain within itself all that is necessary for its perfection. If this be admitted, then it is clearly the interest of the farmer to run no further risk of injury from change of weather, or other causes, and without loss of time to cut it down, and get it safely housed as soon as possible."

It will be observed that Colman says, above, that the best rule is in the condition of the seed. We have been In the habit of judging by both seed and appearance of the stem,—for when the stem, just below the head, has turned slightly yellow, instead of retaining its former green color, on testing the seed between the nails, it will generally be found to have just passed from the milky to the doughy state. The difference, therefore, between these two high authorities is not material. We hope that more attention than ever before will be given to the matter, and that our correspondents will give us the results of their observations.

## TALK ABOUT HAY-MAKING.

Col. Hawks, of Deerfield, states that he prefered to cut grass when two-thirds of it was in the blow. Did not dry it as much as formerly. Hay can be dried too much to pack or spend well. Likes to have it green enough to retain its green tea smell when opened in the winter.

Mr. Lyman, of Northfield, cuts his hay one day and gets it in the next. Wants it all cocked up at night, and prefers to have it raked for this purpose before 3 P. M., and in heaps when warm. Likes to cart clover the second day. Can get hay dry as he wants it, in one good day.

Hon. Hugh Green, of Northfield, thought that hay was dried too much in the sun and too little in the shade. Dew bleaches and injures hay more than many suppose. He not only gets his hay in cocks early in the afternoon, but covers it with cloth caps at night, whether it rains or not.

Dea. Buffum, of Winchester, N. H., and Messrs. Leverett and Hatch, of Keene, use hay caps whether it rains or not. The former stated that he usually cut his hay in the afternoon, cocked it the next day, and the day following got it in. Cattle do better on hay cut early. They will grow and give more milk on such hay. First crop hay gives nearly one-third more tallow than the second crop. He weighs his cattle once a month regularly. Thinks clover cut early the best hay used. Likes to have it stand two or three days in the cock under hay caps, as the sun injures hay. Low land hay needs more drying than English upland hay. Mr. Leverett uses Manny's mower. Likes in the haying season to mow every evening and cart every afternoon. Wants his hay cocked up early the second day, and the day following simply turned over without spreading. Clover needs two or three days curing in the cock. It cost about eighty dollars to cut, cure, and house fifty tons of hay in this way. Estimates the wear and tear of his mowing machine at six dollars a year. His men hoe mornings when he has no hand mowing.

Moses Stebbins, of South Deerfield, said he cut

but little natural hay. He mows his lands six years, and stocks with herds grass and clover. The former will run the latter out in three years. He never mows when the dew is on, nor latterly uses salt in packing hay. Thinks he injured sheep formerly by salt. Cuts clover in the afternoon, and carts it if the weather is good the next day. The hay sweats if housed too green, and six or eight inches of the top of the mow spoils, but has had no hay mould during the last thirty years, unless it was unnaturally damp. The second crop or rowen is more apt to smoke than the first crop. Hay free from dew and rain is not much in danger of spoiling if housed rapidly after one begins. Herds grass is apt to be dried too much, and he often, particularly in the last of the season, carts it the same day he mows it. Considers clover well ripened the best hay for sheep after an experience of sixteen years. Hay will shrink 15 to 20 per cent. in the barn, and when moved never spends like that kept in the solid mow. Thinks a mowing machine is as necessary to a farmer as a plow.

## EARLY CUT HAY FOR MILCH COWS.

What is the best time for cutting hay for dairy cows?—should it be cut at the same time for all kind of stock?—are practical questions which every dairyman must consider at each season.

The state of the maturity to which grass should arrive before it is cut, is a point about which men differ materially. The different dispositions which are to be made of the hay doubtless modify to some extent the conclusions at which they arrive. Some think it should stand till the seed is full and the stems get pretty well ripened, because it is then heavier than before. Others think it should be cut when in full bloom or before.

There is quite a difference in the kind or quality of hay cut before and after it is in blossom. Before it is in bloom its extractive matter, which is used as food, contains a greater percentage of starch, gum, sugar and fat, especially yellow fat; and after it has passed the bloom it has a greater per centage of flesh-forming material along with woody fibre and mineral matter. In the former, it contains more elements of respiration, the source of animal heat and fatness; and in the latter, the foundation of muscle.

These different qualities have their uses. The horse, by his vigorous exercise maintains his proper warmth, to a considerable extent, by the rapid waste of tissue and muscular fibre, and hence, especially in warm weather, can labor and travel better on the less heating, late cut hay.

But in the young animal, the calf, the heat derived from the waste of tissue is comparatively but little, and hence the early cut or more heat-producing hay is wanted; and, besides, the green food is more easily digested.

A cow when giving milk does much the best upon the same kind of food preferred by the calf, because she derives her warmth not by exercise, but by her food directly. To maintain her condition and give milk, a cow must be fed on food rich in the elements of fatness. It is impossible for a cow to give a large quantity of rich milk on late cut hay, without growing poor rapidly; because it does not contain the material from which the milk can be formed, and is, withal, so slow of digestion, that she can do but little more than digest enough to support herself.

There is, I know, but little use in showing by argument when hay is best cut for any purpose. It is a point that must be settled by practice rather than philosophy. I have experimented till I am fully satisfied that I have suffered annually a serious loss by letting my grass stand too long before I commenced cutting. I have done as a majority still do, waited till I supposed it had reached its full size before I begun. I have had too much regard to bulk and weight rather than quality.

If any reader is sceptical about the greater value of early cut hay for producing milk, especially clover hay, let him try it; let him cut some late and some early, and fodder it out any way that will satisfy him conclusively as to the value derived from each from a given area of ground, and my word for it, if he has been in the habit of waiting till his grass has reached its full weight, or even its full size, before he begins, he will start earlier next year.—*Dairy Farmer.*

## APHIS ON APPLE TREE BUDS.

Those who have noticed on their own trees the "New Insect," described by our correspondent of last week, will be interested by the following article written for the Albany *Cultivator* by the Entomologist of the New York State Agricultural Society—a gentleman who has done and is still doing the agricultural community valuable service by his unwearied labors in the sphere which he so ably occupies:

The fore part of the present month J. J. Thomas sent me some opening flower buds of the apple tree, thronged with young plant lice, nestling close down among the pubescence. He finds these insects, 100,000 to 1,000,000, on every apple tree in his vicinity, every expanding bud being crowded with them. And I find the same aphis common though less excessively numerous, on the opening buds of the apple trees in my own neighborhood. They are the young of the common aphis which infests the leaves of the apple trees during the summer—the *aphis mali.* These insects end their annual career late in the autumn, by depositing their eggs, crowding therewith all the crevices under and between the scales of the bark of the apple trees, as full as they can hold. Most of these eggs are swept away by the storms of winter and perish. Those which remain hatch with the first warm days of the returning spring, just as the flower buds are beginning to open. Thus the young plant lice all become crowded upon these buds, nourishing themselves thereon until the leaves become sufficiently developed to sustain them.

No Weeds to Pull.—Stir the ground often, and they will never get big enough to pull. A loose top-soil can be stirred up a half-dozen times with a hoe in the time required to go over it once in the pulling process. The growth of all plants will be greatly promoted by stirring the soil often.

It is said that warts on the udder and teats of cows may be easily removed by simply washing them in a solution of alum and water.

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## CATTLE MARKETS FOR JUNE.

The following is a summary of the reports for the five weeks ending June 22, 1864:

NUMBER AT MARKET.

| | *Cattle.* | *Sheep.* | *Shotes.* | *Fat Hogs.* | *Veals.* |
|---|---|---|---|---|---|
| May 25..... | 1575 | 2054 | 650 | 1150 | 1100 |
| June 1..... | 975 | 3660 | 625 | 641 | 900 |
| " 8..... | 1062 | 2907 | 892 | 800 | 1600 |
| " 15..... | 1481 | 3149 | 750 | 1300 | 950 |
| " 22..... | 1213 | 3336 | 500 | 600 | 800 |
| Total..... | 6296 | 15,106 | 3417 | 4491 | 4750 |

The following table exhibits the number of cattle and sheep from each State for the last five weeks, and for the corresponding five weeks last year; also the total number since the first of January, of each year:

| | THIS YEAR. | | LAST YEAR. | |
|---|---|---|---|---|
| | *Cattle.* | *Sheep.* | *Cattle.* | *Sheep.* |
| Maine..... | 85 | 299 | 284 | 689 |
| New Hampshire..... | 676 | 1578 | 811 | 2790 |
| Vermont..... | 1423 | 5528 | 1073 | 5794 |
| Massachusetts..... | 434 | 810 | 411 | 1830 |
| Northern New York..... | 30 | 516 | 26 | 1162 |
| Western States..... | 3316 | 6271 | 3119 | 2596 |
| Canada..... | 32 | 114 | 24 | 141 |
| Total for the five weeks..... | 6,296 | 15,106 | 5,748 | 14,701 |
| Total, since Jan. 1, (25 weeks,) | 83,626 | 102,864 | 33,792 | 268,766 |

PRICES.

| | *May 25.* | *June 1.* | *June 8.* | *June 15.* | *June 22.* |
|---|---|---|---|---|---|
| Beef, 1, 2, 3 qual. | 11 @13½ | 10½@14 | 10½@14 | 10 @13 | 9½@13 |
| " ex. and prem. | 13½@14 | 14 @14½ | 14½@15 | 13½@14 | 13½@14 |
| Sheep ₩ lb..... | 10 @11 | 11 @11½ | 10 @11 | 9 @10 | 10@— |
| " sheared... | 6½@9½ | 8½@9 | 6 @8½ | 5 @8 | 5½@7½ |
| Shotes, retail..... | 9 @11 | 10 @11 | 10 @12 | 11 @12 | 11 @12 |
| Beef hides, ₩ lb. | 10½@11 | 10½@11 | 10½@11 | 10½@11 | 10½@11 |

REMARKS.—During the past months even higher prices than any heretofore reported, have been paid for cattle and sheep. June 8th there were more than 100 Western cattle sold at 15c ₩ lb., with an allowance of 30 ₩ cent. on part and 28 ₩ cent. on others for offal. Since then we have known of no sales at anything over 14c, and most of the good Western steers at 13 to 13½c ₩ lb.

Sheep have also been sold very high. Sheared sheep at 9½c to 10c ₩ lb., and it is said that one lot of extra wooled sheep, bought in Albany on commission, cost over 13c ₩ lb., live weight. But the month closes with a large reduction in prices.

The following from our report of sales, June 22, will show the state of the market, at that date.

Stephen Mann sold 4 cows and 4 steers best quality of Addison County, Champlain Valley cattle, and the best cattle at Cambridge this week are from that section of clay farms—for 12½c, 35 sk, about 675 lbs, dressed; 5 two-year-olds to Mr. Alger, 450 lbs. each, for $50 ₩ head; 5 steers laid to dress 600 lbs, for $355; 2 steers and a cow for $170, or 11c ₩ lb; and one steer for $45, or 9c ₩ lb.

Geo. W. Morrison sold one pair of oxen laid at 2400 lbs, for $300; 4 oxen laid at 3600 lbs, for $440; one pair laid at 1750 lbs, for $215; one pair, 1600 lbs, for $205; and one pair, 1450 lbs, for $175. These oxen come from another good farming country, the Winnipiseogee Valley, in Central New Hampshire. The Boston cattle market may well be visited by those who wish to spy out the best agricultural localities in New England.

I. A. Blake sold 12 oxen to Henry Zoller for $1190, or from 10c to 12½c ₩ lb; 4 steers for $210, or 11c ₩ lb; and two cows for $70, or 9c ₩ lb.

M. T. Shackett sold 4 oxen 1100 lbs. each, for 12½c, which he claimed were good enough to have brought 13½c two week ago; 4 fat cows 750 lbs. each, for 11c; 12 two and three-year-olds for 10½c, and 6 cows and heifers at 10c.

Batchelder & Bros. sold to Mr. Valpy 19 Western steers, at 12½c, 33 sk.

G. W. Barker sold 5 steers and oxen to W. E. Gowing for 12½c, to kill and weigh, one nice fat cow for 11c, and 5 steers and cows for 10½c.

J. Lyman sold one pair of River oxen at about 13c ₩ lb.

W. Scollans & Co. sold 365 head of Western cattle, part of them left over from last week, as follows, omitting weights for sake of brevity:—20 to G. Davis, at 13½c, 28 sk; 20 to E. Brewer, at 14c, 30 sk; 31 to S. S. Learnard, at 13½c, 28 sk; 14 to E. Porter, at 14c, 28 sk; 13 to C. Sanderson, at 13½c, 28 sk; 51 to J. F. Taylor, at 13½c, 30 sk; 4 to Jacksons, 13c, 30 sk; 12 to S. S. Learnard, at 13c, ½ sk; 5 to F. Pierce, at 13½c, 30 sk; 2 to H. Pierce, at 14c, 30 sk; 11 to T. Brooks, at 13½c, 31 sk; 13 to A. Mead, at 13½c, 30 sk; 28 to C. Sanderson, at 13½c, 30 sk; 12 to O. Lynde, at 13c, ½ sk; 7 to Mr. Phipps, 13½c, 30 sk; 42 to S. Davis, at 13c, 32 sk; 8 to S. F. Woodbridge, at 12½c, ½ sk; 10 to Mr. Ordway, at 12c, 35 sk; 15 at 11½c, 35 sk; 10 at 10½c, 35 sk; and 32 for 11½c, 24 sk.

M. T. Shackett sold 120 sheep 81 lbs. each, for 7c, which he said would have brought 9½c four weeks ago, and 108 averaging 78 lbs, for from 5½ to 6½c ₩ lb. Pratt & Way sold a small lot at 6c; Gen. J. Morse sold a lot of good Canada sheep and lambs, the sheep at 7½c ₩ lb, and the lambs at $5.50 ₩ head. Jerry Batchelder sold 500 Western sheep at from 7 to 7½c ₩ lb; A. N. Monroe sold 200 Western sheep, 88 lbs. each, for 6½c ₩ lb. W. Scollans sold a lot kept over from last week, for 6c; Austin White sold one lot for 7½c, which was the highest price we heard of, for sheep at Brighton. Grand good lots, fat enough, and too fat, some of the butchers said, at 7c. A lot of good wooled Western sheep at 10c.